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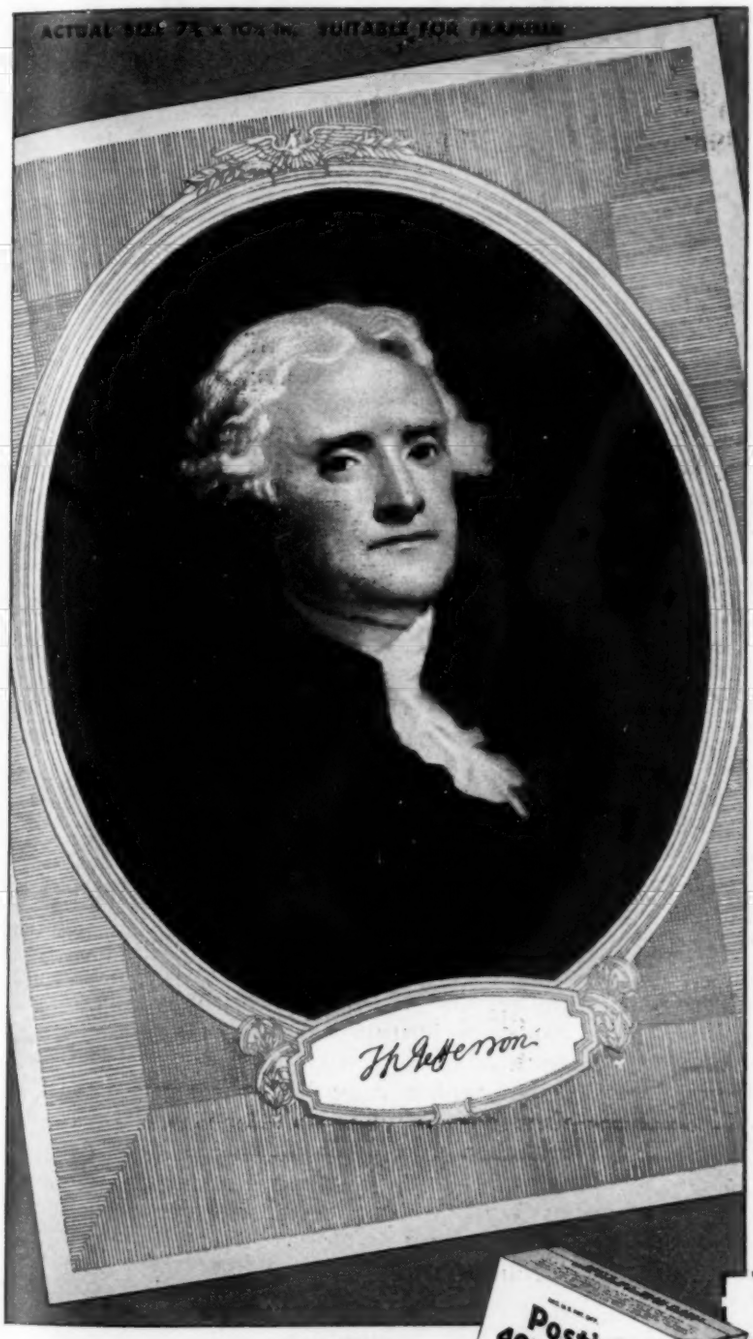

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AUGUST 1936

The Other Side of

THE DRUNKEN driver, the reckless driver, the driver who is nonchalant about through-street stops, the curve passer, the hill-gambler, the moron with bad brakes and defective lights, all have come in for their share of condemnation, and none too much. They are a menace to life and limb, and their depredations must be stopped at all costs. But there is another side to the automobile accident question. Accidents, we are informed by those who have studied them and developed standards of safety and courtesy for motorists, do not merely happen—they are caused. And in their causation, the motorist is not the only factor.

It is true enough that there are too many careless drivers, but it is equally true that there are many more careful motorists than careless ones. Otherwise the accident tolls would be even more appalling than they are. The careful, considerate driver is not as prone to accidents as the reckless and careless operator, but occasionally he may be involved in one. When this happens, he may be the victim of circumstances beyond his control, but not entirely unavoidable.

THE return of the bicycle has been one of the prominent features of the American scene in the past two or three years. This vehicle opens up new opportunities for wholesome recreation, but it also creates new hazards on the highway, especially when ridden by the immature or by the physically mature but mentally juvenile adult. The bicyclist is guilty of several glaring violations of good sense, courtesy and safe practice. He does not obey arterial highway signs, and no attention is paid to the violation, though it is every bit as hazardous as a similar practice by motorists. He weaves from side to side on the road. He rides after dark without lights or reflectors. He turns without signaling. He cuts across traffic unexpectedly. In groups, he spreads out all over the highway instead of using a safe lane near the edge of the pavement. Worst of all, he defies the motorist with smart-aleck, daredevil stunts.

THE pedestrian on the highway, especially at night, accounts for accidents which happen to careful drivers through no fault of their own. That the pedestrian usually gets the worst of it is beside the point, and indeed, may not always be true. Swerving aside to avoid a pedestrian looming abruptly in the darkened road may involve two or more cars in a wreck; often the only choice offered the driver is to take the life of one foolish pedestrian or endanger the lives of numerous riders in automobiles. No conscientious person can face such a choice without mental anguish which may be as serious as physical injury. Pedestrians on traveled highways at night ought not to be only advised, but required to walk on the left side, toward approaching traffic, to carry electric torches or to wear reflector belts or white objects which will catch the motorists' headlights. They should be subject to penalty for walking on the pavement in such a manner that cars must swing far to the left to avoid striking them. Penalties for reckless and foolish driving are enforced against motorists; there

EDITORIAL

Motor Casualties

By W. W. BAUER

should be like treatment of the pedestrian under like circumstances.

Certain city police departments have recognized that the foolish pedestrian may be as great a menace as the reckless motorist. The absent-minded person who stops in front of a moving ten ton truck to tie his shoe, the hesitator who pauses on the curb while his way is clear and then steps out into traffic as soon as it starts moving, the hit-me-if-you-dare fellow with a chip on his shoulder, and the adventurous small boy who stays in the path of oncoming traffic as long as he dares, are all potential accidents. That is why, in certain cities, pedestrians may walk only when the traffic sign says that their way is clear, and the police enforce this regulation just as rigidly as they require motor traffic to stop at their signals. Control of pedestrians is more difficult, because there are more of them. And building subways or overpasses for those on foot will not solve the problem, because there will still be those who will ignore the safe way and blithely continue to give the careful motorist white hair and high blood pressure.

CHILDREN, of course, are the principal cause of accidents which are not the fault of the motorist. Darting out from between parked cars to recover bouncing balls, coasting out of driveways on their tricycles, dashing across in front of cars without looking either way, lingering in the street ball game for just one more smack at the ball, and playing in the gutter, are all well known habits of children. They can hardly be expected to change their characteristics, or to develop dependable habits of care and forethought. It is their parents who must take the responsibility. It is difficult, especially when there are many children and young children, to know where every child is at all times; yet that is the price of safety. Babies are injured or killed by their own parents backing out of garages or drives, and other accidents of similar type occur because the exact location of the child was not known.

CHILDREN should be taught never to play around, in, under, in front of or behind standing automobiles. Some one might move the car without ever suspecting that there is a child near. There is no use trying to teach children to look both ways before following a ball into the road. The way to prevent these accidents is to provide play space, and insist on its use, in such a location that accidents of this character become impossible. No reliance on forethought can be justified in the case of children at play, but neither ought the whole burden of responsibility for their safety be placed on the motorist. Parents must assume their share.

This is no defense of the reckless, careless, showoff or drunken motorist. It is no plea in extenuation of the absent-minded, the fuzzy-minded, the incompetent or the selfish driver. It is merely an effort to indicate that there are two sides to the accident problem. Both need serious and continuous attention, for motor accidents bid fair to progress upward in the mortality lists until they have crowded out some of the diseases which we have been accustomed to regard as captains among the men of death.

THE CARE OF INFANTILE PARALYSIS

By Paul C. Colonna

TO EVERY one who has seen the victims of infantile paralysis must occur the question, What can be done to help these crippled, paralyzed patients? The term "infantile paralysis" is not altogether a happy one, but it does indicate two characteristic features of the disease: first, that paralysis of the muscles often occurs and, second, that children are the most frequent victims of the disease.

Anterior poliomyelitis more accurately describes its underlying pathology, as it is an acute infectious disease, attacking primarily the brain or spinal cord and usually leaving some groups of muscles of the trunk or extremities weakened or paralyzed.

Any illness, developing in the summer months in a young child, accompanied by a period of excessive irritability, headache, stiffness of the neck, vomiting, periods of drowsiness, fever with weakness or paralysis of the muscles, is characteristic, and a spinal puncture should be sought at the earliest possible moment. At least 80 per cent of cases occur in children under 10 years of age, but the disease occurs also in adolescent and adult age.

During the acute phase the weakened or paralyzed muscles become exceedingly sensitive, so that the child may scream and resist any attempt to move the affected part. It is in this sensitive period, which usually lasts several weeks or longer, that it is imperative that the child be kept perfectly quiet and flat in bed, for this phase may be prolonged by rubbing or massaging the sore muscles. At this time proper support by means of plaster shells or metal splints lessens the opportunity for contractures to develop. No benefit can result from attempting to hurry the recovery of these patients by beginning any type of physical therapy while the muscles are sensitive.

This is not a disease in which the patient will improve if left untreated or if improperly treated. As study has shown, the patients who refuse or are unable to obtain proper treatment show a slight improvement at first, but later the partly paralyzed muscles may become totally paralyzed and deformities may appear at the joints, rendering these patients unable to walk. On the other hand, in those cases in which careful medical supervision is given there is no time limit to the benefits derived, and many muscles that appear hopelessly paralyzed develop strength and power, often allowing the patient to avoid operative measures. This cannot be too vigorously stressed, as some definite improvement in the return of muscle function can be promised every patient who receives intelligent after-care.

The ability to lead an active vigorous life is largely dependent on the healthy state of the muscles. Whenever they cannot receive their normal stimuli from the nervous system they atrophy and become weakened or even paralyzed. The reeducation, however, of muscles weakened or paralyzed by infantile paralysis is a difficult art to master, and it requires infinite patience as well as understanding of the anatomy and mechanics of the human body. Normal muscles in daily work become tired easily unless periods of activity are alternated with periods of rest. It has been estimated that even the heart rests between beats over ten out of every twenty-four hours. The simple experiment of holding the arm at right angles to the body for five minutes will give a faint idea how necessary rest is to the normal human being.

Therefore in the treatment of postparalytic patients, periods of rest and activity must be most rigorously maintained.

A WORD of warning should be given about too enthusiastic effort on the part of untrained helpers during this period of muscle reeducation. An intelligent mother may be an invaluable ally and can often carefully carry out, under the physician's directions, many beneficial exercises in the reeducation of the weakened muscles, aiding materially in hastening the convalescence. In addition, if the patient is old enough to understand and concentrate on this work of developing and strengthening weak muscles, rather than assuming a passive rôle, more rapid progress can be promised. The interest and zest with which these patients work, however, depends largely on the ingenuity, intelligence and interest of the teacher. One should be extremely careful at all times not to overtire the patient, for cure does not depend

merely on the simple matter of baking and rubbing an arm or a leg. Stimulation of general all-round activity in the paralytic case is most undesirable and harmful.

Another point to be stressed is the matter of clothing. The circulation in the paralyzed arm and leg is below normal; and if the extremities are allowed to remain cold and blue, chilblains and tissue necrosis are apt to develop. The child then should be warmly clad with woolen underclothes, particular attention being paid to the wearing of woolen stockings and mittens.

It is important that the parent should understand that these muscles are weakened or sensitive and that the patient is unable to do his normal work of moving the body or arm or leg. The reason for persistent insistence on rest and careful muscle reeducation and on the purchasing of properly fitting braces and warm clothing will then be better understood, and cooperation will be more easily obtained. Parents can have a reason for knowing why these patients should not be allowed to sit up in bed if the trunk muscles are affected; why they should not be urged to walk too early on the weakened extremities; why sensitive muscles should not be rubbed or massaged, and why warm woolen, instead of thin silk, stockings should be worn.

In addition to these well recognized methods of treatment there is another valuable adjunct which in the past few years has made a popular appeal to the public; that is, the therapeutic pool. In a few hospitals, swimming tanks have been installed and have been of great benefit. The principle on which underwater exercises are based is simple and depends on Archimedes' principle, which is that a body submerged in water will lose as much weight as the weight of the displaced water. An extremity can be moved with remarkable ease under water; yet the same extremity feels heavy when lifted out. Therefore it is evident that if a person with weakened muscular power is placed in a pool he will be able to perform movements that are impossible out of the water. The addition of salt to the water raises its specific gravity and thereby renders the movements even easier. Under the water the flexor, extensor, adductor and abductor muscles all can be exercised against an equal degree of resistance as the

IF THE MUSCLES ARE NOT PARALYZED, BUT ONLY WEAKENED, THE POSSIBILITY OF IMPROVING THEIR STRENGTH IS GOOD, AND THE CHILD SHOULD RECEIVE CAREFUL EXERCISES IN MUSCULAR TRAINING.

pressure of the water is distributed equally over a submerged body. Children affected with infantile paralysis are sensitive to low temperatures, so it is desirable to have the water warmed to between 85 and 95 F. Using a pool under these conditions permits the strengthening of weakened muscles by graduated exercises and is of great assistance in guiding a child through the important transitional period of being a bed patient to one living a moderately active, even though restricted, life. However, the simple home-made expedient of supporting these children in a tub of warm water and permitting them to exercise and use certain groups of muscles is generally possible and should be used if a pool is not available.

CERTAIN complications and deformities frequently develop following an attack of infantile paralysis. Among these is a curvature of the spine, a most distressing deformity. Every precaution should be taken to prevent its occurrence. Frequently the child is allowed to sit up in bed during his convalescent phase, thereby permitting the remaining active muscles to distort the trunk, and the result is often a crooked spine. Weak abdominal muscles which are not properly supported will also permit a curvature of the spine to develop. A plaster jacket or brace should be fitted when the proper time arrives for this patient to stand erect.

Another deformity may develop as a result of weakness of the muscles about the shoulder joint. If this occurs the child is unable to lift the arm from the side or to use the shoulder in any satisfactory manner. If these muscles are only weak and not paralyzed, the possibility of improving their strength is good, and the child should early be fitted with an airplane splint and receive careful exercises in muscle training. Deformities may even develop about any of the joints of the body and are produced because the strong, active muscles, lacking the balancing power of their antagonists, cause persistent deformities. It is in the correction of these that orthopedic surgery has contributed many valuable operative procedures.

THE maximum improvement by the conservative measures previously mentioned will be obtained within three years after an attack of infantile paralysis. In most cases, therefore, any operative treatment should be delayed until two or three years after the initial attack.

Since the time of Strohmeyer, who in 1832 introduced the method of dividing a short or contracted muscle, tenotomy has remained a simple and valuable operation. One instance is that of lengthening the contracted Achilles tendon, thereby permitting the patient to touch the heel to the floor when walking and allowing the disabling deformity of equinus to be simply corrected. Another is the correction of a hip flexion contracture by muscle stripping and tenotomy.

Muscle transplantation operations have a limited field for usefulness when applied about weight-bearing joints and can be more effectively applied to the upper extremity. This operative procedure should be expected to be satisfactory only in those cases in which the operating surgeon can keep the patient closely under his care and supervision, for the postoperative muscle reeducation of the transplanted muscle is absolutely necessary if success is to be expected.

The advisability of correcting paralytic deformities by surgical interference must be based not only on the degree of paralysis existing but on the social and economic status of the patient as well. While tenotomy and muscle transplantation operations are in the armamentarium of the operating surgeon it is likely that the stabilizing type of operation provides the most satisfactory method of treatment in all the cases of severe paralysis and in many of those in which only isolated groups of muscles are permanently paralyzed.

FUSION of the spine is an invaluable procedure in the case of paralytic spinal curvature, a successful fusion often permitting the patient to discard braces or plaster casts. This operation is a safe surgical procedure. The question always in the surgeon's mind in the treatment of these postparalytic deformities is whether, by any operative procedure, he can enable these patients to discard their spinal or extremity braces. Often by a stabilizing operation an internal form of support can be produced and the external support may then be discarded. This is particularly true in an arthrodesis of the wrist for wrist drop, arthrodesis of the shoulder for deltoid paralysis and subastragaloid arthrodesis for certain disabling deformities of the feet.

Many factors enter into the decision for the type of operation to be selected for the individual postparalytic patient; and as has been stated, the social and economic status of the patient will largely determine the surgeon's decision.

In spite of the complications present in the whole problem embraced in the after-care of infantile paralysis, it is well to remember that nature will offer a certain degree of spontaneous repair for many months after the attack, provided the patient can and does receive careful, intelligent supervision of the muscles affected by this disease in his long convalescent period. After the convalescent period is over and the recovery of the affected muscles has reached the maximum, various types of operations are available to the patient which permit the correction of deformity and in many instances permit braces to be discarded.

The "Compatible Eating" Fad

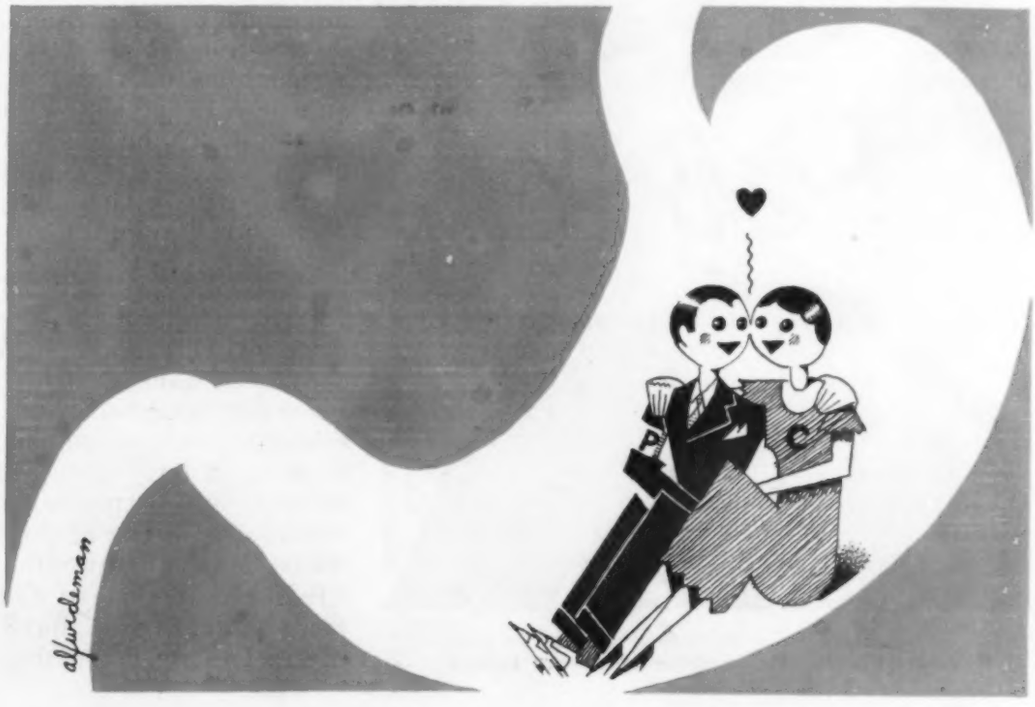
By CLARENCE WILLIAM LIEB

EVERY few years a new movement in food reform is started. In its wake a formidable array of catchy pseudoscientific phrases, slogans and dietetic dicta appear. The sponsors of the fad, in preaching some unique doctrine or in vaunting some touchstone of health, proclaim the idea that health is not a natural endowment and that only by some dogmatic ritual of eating can it be acquired.

The *act* of eating is as old as life itself. Raw food, from the birth of human gastronomics until the advent of the application of fire to cooking, was standard food. The *art* of eating dates, let us say, from the day our hungry ancestor found in a mountain gorge a freshly roasted deer killed by a forest fire which was started by a bolt of lightning. The *science* of eating was born within the past century when the words "calories" and "vitamins" became household shibboleths. As science discovered new food facts, commercially minded individuals, emulating his satanic majesty, began to "cite Scripture" for their purposes. They misappropriated these new scientific facts, garbled and misapplied them. The food faddist thus came into being and, like the poor, is ever with us; but his fad, like the dog, has its evanescent day.

Nearly a score of eating systems, now as obsolete as the first flivvers, have come and gone during the past quarter century. Concordant eating in one guise or another has always been a favorite theme with food fanatics. The conception of food incompatability, under the influence of these "food experts" whose facts are based on a smattering of science and sometimes coupled with superstition, has undergone an evolutionary change in recent years. Have not we all been warned at some period of our lives not to eat at the same meal, fish and celery, lobster and ice cream, pickles and peaches, or strawberries and cream? And now the food "curists," pulmotorizing the same dead issue that "a mixture of certain foods is certain poison," enlarge the idea to include food groups.

"COMPATIBLE eating" now has the spotlight and is the latest dietetic bugaboo which food cranks have devised to frighten the bewildered and gullible public into following their "plan" or "system" of eating. They declare that "starches and proteins should not be combined," that "carbohydrates require an alkaline solution for digestion" and that "meats and acid fruits require a natural acid solution." They overlook the fact that present-day biochemists have shown that starch and sugar, both carbohydrates, can be digested in a neutral medium and that proteins are digested in both the acid stomach and the varying alkaline reactions of the small intestine. Old-fashioned incompatibles have been superseded by the new-fashioned incompatibles based on the same old reasoning. They are still living the Rip Van Winkle days of



PROTEINS AND CARBOHYDRATES GET ALONG DOWN IN STOMACHLAND LIKE PROVERBIAL TURTLE DOVES.

physiology, forgetting that the occasional symptoms arising from eating the aforementioned "incompatibles" were due not to the "combination" but to several other factors and possibly to a condition which modern biologists term allergy, a personal and not a collective idiosyncrasy. So to paraphrase a well known Elizabethan commentator "the fault, dear reader, is not in our 'food' but in ourselves, that we are 'digestive' underlings." Wrong deductions might have been permissible in the old daguerreotype days of dietetics when any one with an idea was entitled to a hearing. Therefore, to be guided in our eating and dieting by obsolete biochemical reasoning is just as dangerous as it is unscientific.

The word "compatible" is such a pleasing word on the lips! When applied to an eating ritual it has a great selling appeal for it "sounds so reasonable."

PLAUSIBILITY, however, is readily mistaken for truth; and it is easy to misconstrue fleeting fads for fixed facts. The food faddist who writes books or lectures on diet utterly ignores scientific data. He nonchalantly hurdles proved facts if they seem to stand in the way of his theories and particularly when he is acclaimed by an audience of prejudiced admirers.

Stefansson has remarked in his book, "The Friendly Arctic," "There is no field of human thought, unless it is religion, in which sentiment and prejudice take the place of sound judgment and logical thinking so completely as in dietetics." Certainly dietetic cults, like many religious cults, are guided by emotions rather than by reason. One can condone speculative and credulous thinking when considering the soul or its destiny, for after all we have little concrete knowledge about either. When it comes to contemplating the human body, however, warped, bigoted and stupid thinking is inexcusable for we do know a great deal about its physiology and the food elements which enable it to function. Furthermore, the human soul crying in the wilderness of spiritual doubts and misgivings will grasp at and cleave to any philosophy or creed which offers surcease from sorrow or mental conflicts. That "soul" is no more pathetic or perplexed than one with a physical infirmity who has wandered through vicissitudes of dietetic doubts and disappointments and is ready to grasp at any new health maxim which offers hope when all other methods have failed.

AS YOU SPIEL YOUR SYMPTOMS, THE DOCTOR MUST COGITATE OVER THE NORMALCY OF REMOTE ORGANS.

Nutritional writings have run the gastronomic gamut from religion and psychology to the present-day fad of geometric dietetic guesswork. This they have done in spite of the fact that the greatest scientific minds of the world have pooled their knowledge in studying the functions of the human body as well as the chemistry of the foods which nourish it. Therefore, what is one to think when grandiose diet czars arrogate unto themselves superior knowledge in a field in which their own writings and pronouncements from the lecture platform show them to be the merest tyros in the domains of chemistry and nutrition?

THE subject of food combinations, like the weather as referred to by Mark Twain, "is talked about a great deal, but nobody seems to do anything about it." Certainly nobody with a scientific background or with a scientific approach to the subject has given his stamp of approval to the current formula of incompatibles.

A number of years ago, I myself thought the combinative system of eating might have some merit and was at least worthy of critical study by orthodox physicians. A survey of the case records of patients who had followed this type of dieting was rather convincing at the time, and I went so far as to approve in print certain favorable aspects of the system. Subsequent scientific experimentation and a careful clinical study of a large group of "compatible eating" subjects have explained both the fallacies and the limited merits of the system.

Concerning the noncombining diet, Dr. W. C. Alvarez of the Mayo Clinic remarks, "I often meet patients who have been trying to cure themselves by not eating protein and starches

at the same meal. It seems to me that if the Lord had wanted us to eat that way, he would have revealed the fact to us a few thousand years ago. It would seem as if only an ignorant person could take stock in such a theory because any one who knows anything about metabolism and diet knows that when one eats meat alone, one is partaking of material, half of which acts as a carbohydrate in the body." Dr. E. V. McCollum of Johns Hopkins University believes, "There is no basis for eating proteins and carbohydrates separately, as has been lately acclaimed. People should seek advice about foods only from persons of recognized standing." Dr. Martin Rehfuss of Philadelphia says, "There is no evidence in literature or our investigations to lead us to believe that proteins and carbohydrates are incompatible in the stomach. A fact that has apparently been overlooked by the proponents of the carbohydrate-alkaline theory is that no carbohydrates are ingested that are not followed by a direct acid response on the part of the stomach. More than 400 chemical analyses of the digestive processes demonstrate more than words can express the absolute negligence of the statement that proteins and carbohydrates are incompatible in the stomach."

NATURE was not asleep when she devised some of her food formulas, even though she bungled things considerably when in a moment of carelessness she created food faddists. The analysis of an average milk formula reveals the following proportions: proteins 3.4, fat 3.4, sugar (lactose) 4.7. One of nature's most specific foods, liver, the aristocrat of viscera, is composed of protein 20.2, fat 3.1, sugar (glycogen) 2.5. The pea and the bean family have their protein and starches in the proportion of 1 to 3, respectively; and the plebeian starchy potato contains a protein of extremely high nutritional value.

So let's forget the food side of incompatibility and concentrate, for a moment, on the real heroes in the drama of eating, the alimentary enzymes. The health status is determined by these extraordinary catalysts, agents which activate the digestive processes without chemically entering into the process itself. A standardized food formula cannot be compatible if the enzyme-producing glands are not giving the kind and quantity of enzymes necessary to enable the tissues to utilize the food eaten. For example, if your stomach lacks the special acid which has to do with the digestion of protein your physician will, no doubt, not only fit your diet to this condition but also give you the very acid in which nature is stinting you. If your internal realty holdings, known as the islands of Langerhans, do not produce an income in the form of insulin, your doctor must step into the picture and supply what your pancreas lacks. The sugar and starch which you then eat will be properly assimilated, and you will not suddenly lapse into a coma. Your doctor will also take into consideration the fat-splitting enzymes, which may lack quantitative or qualitative vigor which a corrective diet and the proper replacement remedy can help. It is obvious therefore that your diet must fit your particular, personal requirements and that no stereotyped arrangement of foods or meals is going to cure you!

THE majority of those who have been converted to the principle of standardized "compatible eating" and have been benefited are those who have called a halt on overeating and have replaced a meat, potato and white bread diet with such protective foods as green vegetables, fruits and milk. Any diet which enforces the foregoing principles has merit; but it must be remembered that "as one star differs from another in glory" no two stomachs can be treated alike.

Why is it that intelligent persons will follow, literally and faithfully, the diets of irregular doctors when with calloused indifference they will fail to follow the scientifically measured advice of honest doctors? Who has not observed that all freak diets contain some very sound advice, such as the avoidance of overeating, of

THE QUANTITY OF STARCH USUALLY FOUND IN OUR MEALS WOULD HURT A BILLY GOAT'S PRIDE.

intemperate drinking or of indulgence in rich pastries or highly seasoned food? It is similar to the suggestion always made in mail order reducing schemes: "With this method you do not have to diet. Simply take two pills three times daily; but if you are in a hurry to reduce, it is advised that you cut out sugar, starches and fats from your meals." Of course, the gullible patient is in a hurry, follows the facetious advice and loses weight; and the pills are given the credit. So it is with many systems of eating; you cut out your gastronomic vices and get well. Another fooled client is thereby born; and the system, plan or dietetic stunt gets the credit. If you will but read over the directions which your last good doctor gave you, you will find plenty of sound council which you utterly ignored and which may account for your health failure or slow convalescence.

Your physician may have advised a monthly or a biyearly health inventory. You ignored this and had your pain rubbed out or something rubbed in, and no search for the cause was made. Now, of course, you can overdo this matter of doctoring. A little common sense applied to the interpretation of your symptoms has its place. Also, a little alimentary introspection is justified. If you have occasional digestive symptoms look over your eating audit sheet of the preceding twenty-four hours and often you can tell the cause of your indigestion or indisposition. But if you have recurring digestive symptoms or are losing weight without obvious reason, betake yourself immediately to the best doctor you can find and put your symptomatic cards on the table. His experience may be large enough and your cash balance small enough to permit a competent diagnosis without all the elaborate roentgenologic, metabolic, physiologic and bacteriologic refinements of modern clinics. But your physician, no matter how eminent or prematurely bald he may be, may shake his head and squint his eyes and tell you that only the aforementioned investigations can ferret out the specific cause of your health lapse. Then you had better beg, borrow, pawn or save to secure the necessary dollars to have a thorough diagnosis made.

Did you ever stop to think what a kaleidoscopic reel of thoughts run through your physician's mind while you are relating your digestive symptoms to him in his consulting room? If he is both wise and clever he asks himself not only "What kind of a disease has this patient?" but also "What kind of a patient has this disease?" He does this because he knows that identical pathologic conditions in several individuals may progress quite differently according to the varying nervous or physiologic statuses of the patients. Then your conscientious doctor must think of the shape and position of your stomach, its functional efficiency with reference to its secretory mechanism and the action of its valve, the pylorus. He cogitates over the normalcy of your liver, gallbladder, pancreas, duodenum, ilium, ileocecal valve, cecum and colon, crypts and sphincters. He visualizes the possible presence of spasms, kinks, adhesions, pockets, ulcerations, polyps and inflammation. After one or two visits to his office you wonder why you are not cured of a condition which may have taken years to develop. When he frankly and honestly tells you of the uncertainty of a quick cure, you impatiently look elsewhere.

You then hear of some one with a magic formula, a dietary system which cures everything from "athlete's foot" to "running ears." You know as little about the educational qualifications of the promoter as he does about your organic or physiologic status. Yet trustfully you listen to his convincing words, and faithfully you follow his theoretic "cure" and swear allegiance to his dietetic platform.

The dangers of following a wrong diet are similar to those of following the wrong road through the Amazon jungle. You may reach your objective after a hazardous journey, or you may get lost entirely. The miasmic swamps of diagnostic and therapeutic guesswork end in but one place, "the valley of the shadow of death." One of two things may happen to you; possibly I should say three things for it sometimes happens that the patient recovers in spite of what is done or not done! When your condition is wrongly treated it may become chronic, or the delay in diagnosis of the real pathologic changes may force you some day to hear those awful words, "too late." Only recently, a cancer was pronounced "inoperable" because the patient had followed a freak diet for six months after the onset of symptoms; even four months sooner an operation could have been performed with full assurance of a cure.

"Four out of five" cases of chronic indigestion may be due to ulcer, from the simple mucosal type to the perforating type. The so-called compatible diet, which is a fodder type of diet, consisting of raw and cooked stringy vegetables, and fruit for at least one meal of the three, will do exactly the opposite to what nature requires for a cure. The coarse food mechanically irritates the tender ulcerous spot just as the careless use of a toothbrush might prevent a "cold sore" from healing. Irritation enhances acid production and, to carry the simile further, the "cold sore" will heal very slowly if vinegar is dribbled on it several times daily. So the ulcer goes from bad to worse, and finally you find that you cannot eat anything without making yourself uncomfortable. You then stop eating for a while, drink milk and take a little soda. If you are excep- *(Continued on page 761)*

HEALTH and the CIRCUS

The Story of the Florence Nightingale Hospital, Ringling Brothers and Barnum and Bailey Circus

By HUGH GRANT ROWELL

IMAGINE, if you can, a hospital which from mid-April to mid-November travels some 15,000 miles, north, east, south and west, in jumps varying from 14 to 284 miles, serving a traveling community of all classes and big top social castes of some 1,500 persons. That's the "Florence Nightingale," Number 99, the new hospital car of the "Greatest Show on Earth."

The hospital car is part of a fairly complete traveling medical service. In comes the "Squadron," or first train, sometime in the early hours of the morning. Quickly following it is the second section. From this train descends the medical orderly, Mr. Joseph McCarthy, valued aide with years of experience. He goes to the grounds, sets up the medical office and gets everything ready for the Medical Director Dr. Joseph Bergin.

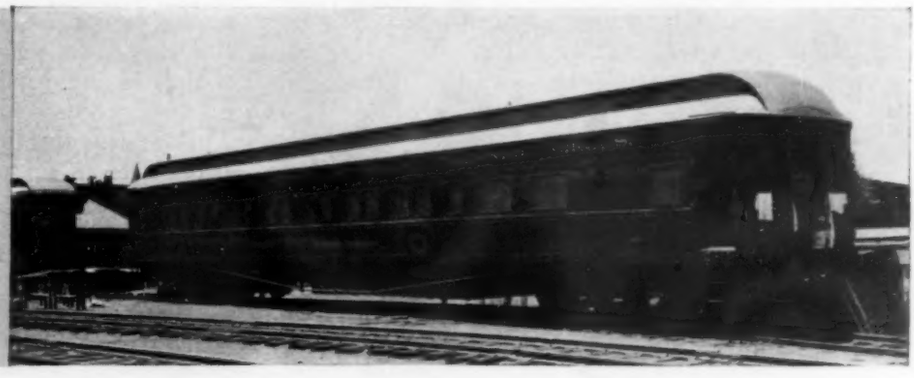
In comes section three. And finally appears the fourth or performers' train where among sleeping cars named for various states, you will find the "Florence Nightingale," no mean tribute to that Crimean humanitarian.

Car 99 is one of the finest, structurally, on the four trains. It is painted, like the others, a true Pullman green, with the name of the show in gold letters where the word "Pullman" generally appears. The car is of standard length, some 70 to 72 feet, usual for both sleepers and circus cars of all types.

As you look at the sides of the car you wonder how you enter. There appears to be no door. Entry must be made at the end. Several feet usually devoted to vestibules is incorporated in the interior of the car where every inch of space is needed and used.

Up a short ladder you go, since the car is not attached in the yards to the rest of the train. In through a screen door, and you enter the operating and treatment room. Your escort, if you are an honored guest, may well be famous youthful Joe Dan Miller, in charge of the sleeping cars for some four decades or more. The car is his pride. In the operating room you will meet Miss Daisy Jones, head nurse, in a white uniform with a black band on her cap, and Mrs. Edith Housen, who combines nursing and Southern style cooking as a career. These two nurses are left in charge of the hospital when the doctor and his assistant maintain medical service on the grounds.

THE interior of the car is fascinating. If you are fortunate enough to chat briefly with busy Mr. Samuel Gumpertz, general manager of the circus and the Elisha bearing the mantle of the Ringling brothers, circus prophets and leaders, he will smile with pleasure if you like the car. And why not! He designed it, supervised the building in the show's shops at Sarasota, Fla., found a physician to put in charge of the existing medical department, and already has the satisfaction of knowing that another winning feature has been added to the most beloved of his amusement enterprises—a feature, this time, that is humanitarian. If you have an opportunity to meet charming and friendly Mrs. Charles Ringling, minister's daughter, widow of one of the five famous brothers, she will tell you that they have wanted the "Florence Nightingale" for some time. Nowhere in the show do you find anything but praise for it. A visitor



JUST ONE OF THE UNUSUAL THINGS ABOUT THIS FASCINATING HOSPITAL CAR IS ITS MAIN PORTAL OF ENTRY—IT'S FOUND TO BE ON ONE END RATHER THAN ON THE SIDES.

AT LEFT IS SHOWN ONE OF THE LARGEST OF THE THREE WARDS INCLUDED IN THE FLORENCE NIGHTINGALE. BELOW, A PERFORMER RECEIVES FIRST AID TREATMENT FOR A MINOR INJURY.

Courtesy of Ringling Bros. and Barnum and Bailey Circus

is amazed at what has been done in the comparatively small space available.

On one side of the entry, inside the car, is a linen and supply closet. Opposite is a wash room and shower bath. The adjacent operating and treatment room, small but well equipped, has the usual table, sterilizers, instrument cases and even an infra-red treatment lamp with which some dozen or more treatments are given a day, for sprains and sore muscles are inescapable in circusland's program of feats of skill and daring.

Down the car, as in Pullman stateroom cars and in European passenger cars, is a corridor at the side. In the wards the passage is at the foot of the beds, which are placed across the car. Between the operating room and the wards is the doctor's stateroom, having a real bed and the usual comforts.

THE three wards have three, two and three modern hospital beds, respectively. Special "gadgets" make it possible to raise the heads of the beds and make various other adjustments as in any good hospital. Each patient has an individual locker, chart board and push button for service. Wash bowls and a flush toilet are available; in the latter there are special sterilization possibilities, if needed, and the container is concealed in a special compartment in the "possum belly" under the car. This "attic" is built as a cellar and has as vast a capacity as attics do in most homes "on land."

Next to the wards, at the other end of the car, comes the kitchen, planned like that in a modern city apartment. The nurses' boudoir is at this end of the car.

Overhead are tanks holding some 450 gallons of water, which is changed daily. Lighting is by electricity. Electric fans are supplied at strategic points, assuring, with the doors and windows, satisfactory ventilation. Heating is by portable oil stoves; coolness, not warmth, is the usual problem in a circus car.

The pleasing decorative scheme is aluminum gray and purple. The wall color is aluminum. All curtains for windows and cubicles are purple. The cubicle curtains, as in a modern hospital ward, are suspended from metal frames and make it possible to give each bed all the privacy that is needed.

The "Florence Nightingale," throughout, leaves you with the impression of its simplicity, practicability, attractiveness and thorough planning.

Why does a circus need a hospital car? The answer lies in observing the medical service "on the lot."

In the "back yard" the "back of the show" activities are carried on. Here performers have their individual or community dressing tents and wagons, and here they live and eat during the day. In easy access you will find a tent which is the busiest spot in the private streets of the circus—in the Village of Spangleland. This is the doctor's office and, in earlier days, some one often painted a crude "DOC" on the sidewall.

The waiting room is beneath a canopy about 12 feet square, separated by a canvas partition from a treatment room about 6 by 12 feet where may be seen the instrument table, cot and specially devised trunks for carrying medical

equipment and supplies. Except for the lack of magazines of doubtful age and interest, the use of portable chairs and the circus atmosphere about, you might well be in any medical office.

THIS medical service on the grounds is comprehensive. New employees are examined. The circus does not want to add persons with heart trouble, ruptures and contagious diseases, including venereal disease. So it eliminates them from the start. In addition to the work of the sanitary department, which uses army methods, and in addition to the huge sterilizing dish washer, which is carried on a special wagon and does dishes for about 4,500 meals a day, the medical officer provides and requires routine protection against smallpox, typhoid and paratyphoid fever.

First aid service is provided to meet the needs of the twenty to thirty thousand daily patrons of the show, any of whom, in spite of precautions, might require first aid as a result of fainting or an accident. Safety methods galore plus the superior ability of circus employees to control crowds keep down the injuries. There are also to be remembered those racketeers who either fake accidents or exaggerate the slightest hurt. Here, for legal as well as professional reasons, the importance of a show physician is recognizable, if only to insure fair play to all concerned.

AND now about the service to the show's personnel in times of illness or accidents. It is generally agreed that circus employees, as a group, are of a physically superior type. From professional if not moral necessity the performer leads a generally cleancut life and spends much of it outdoors. The food in the cookhouse on the Big One, both under the late Ollie Webb and the present steward, Mr. Blood, is excellent, and the menus would meet the approval of any nutritionist. A recent dinner consisted of clam chowder, codfish or mackerel with potatoes and green vegetables, slaw salad, fancy cake, with the usual accessories in drinks, bread and butter and condiments. Lettuce salads are sometimes served. Delicious baked custard puddings, with a touch of whipped cream on top have appeared as desserts. Variety is excellent, and there is always plenty of everything. The sterilizing dish washer adds another health feature.

Since one cannot control the weather, respiratory diseases are one source of illness, and injuries of the athletic types—sprains, strains, and even fractures—form the other common source of indispositions. Any other type of illness, however, may occur, and the circus must be prepared for it.

Here the Florence Nightingale becomes of real service. Previously it has been necessary to leave behind, in good hands, all but the mildly sick or injured. There they were, in strange communities, far from their tented home and friends. Car 99 makes possible improved service at lower cost. For, in addition to running up heavy hospital and medical bills, the temporarily deserted performer, who is often an important feature in the program, may not return to retraining and actual work as soon as possible. Furthermore, it costs a great deal of money to transport the patient back to a show that is making mighty jumps all over the country.

MANY patients, hitherto left behind, may now remain "with it," under their own family doctor in their own community hospital; for a circus is after all only a big village. Certain patients will still require special hospitalization and consultation service beyond what the show can make available from its own medical resources. Here enters the professional judgment of the circus doctor, as in the case of any family physician. Inevitably the patients with serious cases must still stay behind. Nor can those with contagious disease be carried. They must remain behind in quarantine.

Today the costs of medical service and hospitalization and how to meet them are always of interest. Here in the circus is a situation resembling that found in communities where a doctor has been procured and underwritten and provided with a suitable hospital. In the circus the augmented medical service is too new to have a fixed plan for meeting costs. Previously, sometimes, as on a ship, stated fees have been charged by the physician. At other times, some sort of weekly payment has been made to underwrite the costs, as in the present ten-cents-a-week hospital plans. While the new medical service on the Big One has already made good in terms of performance, time will be needed for cost analyses, though there is little doubt that it will give better service for less money than the previous systems. *(Continued on page 743)*

DR. BERGIN AND ORDERLY McCARTHY POSE IN FRONT OF THE OFFICE ON THE LOT. IN THE REAR IS THE MAIN DRESSING TENT.

Century-Allen

PEACHES OUT OF SEASON ARE NO LONGER FORBIDDEN THE DIABETIC.

Home Canning for the Diabetic

By

FLORENCE HARBAUGH DIAMOND

THE diabetic today has a banquet every meal, compared to those with the disease years ago, and not many years ago either. For example, let's consider the one item of fruit. At that time it was not possible to buy canned fruits packed without sugar for those on restricted diets; and to be able to can them at home without sweetening was not even thought of or considered. So the diabetic had to be content with a few fresh fruits as they came in season.

Today not only is it possible to purchase in great variety standard quality fruit, canned water pack as well as juice pack, but it is possible and even easy to can fruits at home for the diabetic and have them delicious. If care is taken in the canning process, there is no need to fear spoilage.

Fruits are so necessary and desirable in a diabetic diet that with a new fruit season just around the corner it is wise to begin planning what shall go into the army of empty jars standing soldier fashion on the basement shelves.

I have had excellent success in canning fruits with saccharin. Any fruit may be canned this way, but those which have the most natural sugar will sweeten more easily with saccharin than the tart sour fruits. Pears, peaches and the large blue Italian prune plums, the later apples and the berries, except of course gooseberries, are excellent when prepared with saccharin as the sweetening agent.

Pears were abundant last October, and I canned them in many different ways. They were the Bartlett pears which, when ready to can, are still very firm but not green; the skin should present a rusty brown appearance. These pears have much natural sugar, and only a small amount of saccharin is needed. They even require lemon juice to bring out their delicate flavor fully and eliminate any possibility of a "flat" taste.

The addition of saccharin to any fruit must be undertaken carefully. Too much produces a bitter rather than a sweet flavor; consequently, it is always wise to add it slowly and to taste, to be certain the right amount is used. Saccharin comes in powdered and tablet form, the tablets usually being preferred for their convenience in handling. Once one becomes accustomed to using certain strength in tablet form, all guesswork is eliminated. One-fourth grain is equivalent to 1 teaspoonful of sugar; ½ grain equals 2 teaspoonfuls of sugar, and 1 grain tablet affords the same degree of sweetness as 4 teaspoonfuls of sugar. However, the safest rule is always "taste as you sweeten." In this way you will overcome any tendency to oversweeten and have a disastrous result.

In the use of saccharin I find salt to be a great help. It somehow assists the saccharin in doing a better job. At any rate, always use salt when seasoning with saccharin.

BUT let's get back to canning fruit. Home canned baked pears are truly delicious. Open a jar of these baked pears in the dead of winter; pile whipped cream in the center of the luscious brown halves, and presto! you have an unusual simple dessert which will add distinction to any meal.

For baked pears, select smooth firm Bartlett pears; wash them thoroughly but do not peel. Cut the pears in half, remove the core carefully, place the halves in a shallow baking pan and sprinkle with salt, cinnamon and lemon juice. Surround the fruit with water in which saccharin tablets have been dissolved and bake it in the oven for thirty minutes at 425 F. Take the fruit from the baking pan, and pack it immediately in hot sterilized jars, filling the jars within ½ inch of the top with the juice from around the pears. Use self sealing lids, and

screw them loosely in place. The pears are now ready to process by any of the three accepted methods: pressure cooker; hot water bath, or in the oven.

If you prefer the pressure cooker, process for twelve minutes at five pounds pressure or for ten minutes at ten pounds. For the oven method, turn the regulator to 250 F., and set as many jars on the grate at one time as you can, but be sure they do not touch one another. Process for one hour at this temperature. Remove the jars to a table to cool, where a draft will not blow directly on them. Do not try to screw the lids tighter at this point, as it is in the cooling period that they seal themselves, and you are very likely to break the seal already started. If you use the hot water bath for the processing, let the filled jars remain in the water for thirty minutes after it starts boiling. In all three methods, use the same caution in placing the jars on a table to cool, where a draft will not blow directly on them.

Some of the pears may be canned plain. As pears of this type are firm textured, it is better to steam them a few minutes before putting them in the jars to process. Peel pears of even size, cut them in half, and remove the core. Season with salt, lemon juice and saccharin, cover with water and steam for fifteen minutes, covered. Pack into hot sterile jars with self sealing lids, and proceed as with the baked pears.

These pears canned plain are so versatile! They may be fashioned into many different tempting salads and various fruit cocktails; or they may be served plain as a dessert or in combination with other fruits, such as bananas or pineapple. If you are having a "party meal" these pears tint easily to help carry out your color scheme. They are ideal to have on the pantry shelf through the winter months for they provide a short cut to delicious dishes.

And now for pear pickles—sweet spicy pickled pears! If you feel they just can't possibly be good without sugar, try only a few at first; but you will soon be convinced and begin pickling in quantities. The smaller pear is better for pickles than the large size, and you may use the hard preserving pear successfully for this if you like. However, the small Bartlett is ideal. Peel the pears, leaving them whole and with the stems on. Have ready a kettle into which has been mixed the following pickling vinegar:

- 1 pint white vinegar
- 2 inch piece stick cinnamon
- 4 or 5 whole cloves
- Saccharin to taste
- ½ tablespoonful mustard seed
- ½ teaspoonful celery seed
- Salt to taste

Place the peeled pears in this mixture, and cook them slowly until they are tender, being careful not to overcook. Pack them into hot sterile jars, pour the hot spicy vinegar over them, and seal with self sealing lids. If you prefer, you may buy the whole mixed spices in the package, and use these, adding only salt and saccharin to the white vinegar. The white vinegar produces a better looking pickle than does the cider vinegar and also imparts a better flavor.

With the exception of the recipe for baked pears these pear recipes may be applied to the canning of peaches. The texture of the skin of the peach renders it unsuitable for baking. But by all means, can peaches pickled, and can them plain, and you will not be disappointed.

Apples may be canned quartered or in plain sauce form and used in a variety of ways when opened. Not all apples will require the addition of lemon juice, but be sure to remember it if the apples seem to lack a desired tartness.

Italian blue prune plums also are ideal to can, and they require surprisingly little saccharin to sweeten them. They are no trouble at all to prepare. Simply wash the plums thoroughly, cut them in half, and remove the seed. Add salt, saccharin and a small amount of water, as this fruit is very juicy. Cook the fruit until done, and seal it in hot sterile jars.

The smaller jars may be used for relishes, those spicy, tart accompaniments for meat, which form a desired addition to any meal.

For bread and butter pickles, cucumbers which are about an inch in diameter and of an even length are best. Mature cucumbers with

H. Armstrong Roberts

IN THE USE OF SACCHARIN, SALT IS FOUND TO BE OF GREAT HELP. IT SEEMS SOMEHOW TO ASSIST THE SWEETENING AGENT.

large seeds do not make such attractive pickles as do those of smaller size. Slice the cucumbers thin, and to each quart add two small sliced onions. Allow the slices to simmer in the saccharin pickling vinegar mixture until clear. The same mixture may be used for fruit pickles. They will require about fifteen minutes of simmering to become transparent. Be sure to cook them slowly. Boiling produces a limp rather than a crisp pickle. Use enough salt, for a pickle needing salt is a failure indeed. Seal the pickles in hot sterile jars. Since these pickles are low in carbohydrate content they are doubly attractive in the diabetic diet. The fact that they are without sugar will never be known unless you decide that you wish to divulge the secret.

Chilli sauce may be made any time of year with equal success. When fresh tomatoes are plentiful during the canning season, it is of course desirable to use these and can them for winter use. If the season has been a poor one, canned tomatoes purchased at the grocery will result in excellent chilli sauce.

In the following recipe, fresh tomatoes are used:

- 6 large tomatoes
- 3 small mango peppers
- 2 small onions
- ½ teaspoonful ground cinnamon
- 2 teaspoonfuls salt
- ½ teaspoonful ground cloves
- 1 cupful vinegar
- Pinch of black pepper
- Pinch of cayenne
- Saccharin to taste

Grind the tomatoes, mangoes and onions. Add the seasonings, and cook the mixture slowly for one hour, or until of desired consistency, stirring occasionally. Seal the sauce in sterile jars, with self sealing lids.

If the chilli sauce is made from canned tomatoes, a standard brand should be selected so they will be red ripe with no green spots. Two of the number 2 sized cans are the correct amount for use in this recipe.

In the early fall, green tomatoes are usually plentiful and reasonable in price. Green tomato relish is a welcome addition to any diabetic diet. Here again the carbohydrate content is low, and therefore the patient is not so limited in the amount he may have. This relish accompanies meat to perfection. It is good combined with cheese, and mixed with salad dressing it provides a different and interesting flavor to the ever popular head lettuce salad. It is simple to make.

To each quart of green tomatoes, add two large mild onions. Grind the ingredients together, and let them stand overnight in salt. In the morning drain them well, add the saccharin pickling vinegar. Place the mixture over a low fire, allow it to simmer slowly until it is of the desired thickness. Seal the relish in hot sterile jars. A few red pimentoes cut in pieces give attractive color contrast to the relish. These should be added after the green tomatoes and onions have been ground.

And now, what about those empty jars? I hope you have resolved to fill them, so that when the bleak winter days roll around you will have many colorful jars, filled with diabetic delicacies, waiting only for a twist of the wrist to do their job of transforming your meals.

Anything that adds to or varies the diabetic diet is always more than welcome. With each jar you open, I am sure you will be glad of having taken whatever trouble was necessary to fill them.

MOTHER to Her DIABETIC SON

And after all,
The kinds of food you eat
And what amount you have
Of this or that
Is such a little thing!

In all the books we've read of great good men
There's not one word I can recall
About the foods that gave them strength
To grow to manhood.
No doubt each had his weakness.
In conquering that, he grew a stronger boy and man;
But when it comes to what's remembered
About each one,
It's what he did, not what he ate, that counts.

Yet "little things" may save your life
For greater deeds, my son.
Through "little things"—the foods you eat,
How much of this or that—
Your will you'll train for sterner tests
In manhood's strong estate.

By KATE HAWORTH

SAFETY IN INDUSTRY

How Theory Grew into Practice

By ELEANOR EVERET

THE GRIZZLED old laborer sat calmly biting off the caps of one dynamite stick after another, preparatory to blasting. He ignored the frozen gaze of the new foreman who had just come on the scene. "Dynamite Joe" had been at that job for more years than the younger man could probably remember, and he had a charm that had always worked with the "hot sticks." So he bit on. It was the easiest way to do a tedious job. The foreman, freshly stocked with company rules and regulations, had but opened his mouth to reprimand the man when Joe began punching holes through the dynamite sticks with a metal bar, likewise in flagrant violation of company rules. No amount of reprimanding availed the foreman until he mentioned to the old fellow that his reputation as a foreman would be ruined if Joe were permitted to keep on taking such chances with his own skin and bones and those of at least a dozen men around him, not to mention the foreman. The premature explosion of a single cap would have blown Joe's mouth off. The stick he held so carelessly in his hand would have sent many to untimely deaths. Joe had his license, however, as a dynamite man. Years of luck and madcap daring had encouraged habitual indifference to his own and others' safety. It was difficult for him to mend his ways, but mend them he must and did.

Modern industry expects and demands not only good work but safe work from employees. Fatalism in regard to accidents has virtually disappeared. Some thirty years ago many employers prided themselves on doing their whole duty if they gave a job as watchman to a man who had lost an arm or a leg in the factory or if they bestowed a few hundred dollars on the widow. Industry was marching ahead, therefore, leaving a trail of accidents behind. Any sort of accident prevention work was subject to only brief spurts of attention. Employers neglected to notice the sharp economic losses due directly and indirectly to accidents in the plant. Therefore there was little stimulus toward the development of practical ways of saving human life and limb as the industrial race went on. The pernicious idea existed that accidents were simply the price of progress.

As the first move toward the safety goal, some twelve years ago one great plant specialized in first aid training for all employees. In about five years the men were approximately 100 per cent trained in this line. Safety workers had no time to catch their breath, for much still remained to be done. They had to get to the actual root of the problem. The next move was along the lines of mechanical correction, that is, the installation of safety devices and guards on all machinery, tools and other equipment. This helped, but far from solved the problem. The human element was yet to be unearthed as the major source of difficulty. Meanwhile the third stage of development was the propaganda campaign, replete with flags, posters and pleadings from platforms, and effective only from an emotional standpoint. Finally, vocational education along safety lines was tried—and not found wanting. The one was innately the part of the other in the training of workmen. There was only one right way to do a job, and that was the safe way.

A hitch in the program appeared. Newly appointed safety supervisors dashed out enthusiastically into outlying plants to teach, preach and demonstrate safety. Foremen were unwittingly relieved of all responsibility for the workmen other than their mechanical efficiency. The safety engineers, in other words, were running their jobs. This was quickly remedied. The fact proved itself that the essential consideration in those management functions which are concerned with doing the job safely are no different from those management functions which are concerned with securing the product for which the company is organized.

CONTESTS were long relished by plant supervisors in this particular company until one day another oddity popped out. In one division, safety fervor had reached the point where no one dared to report an accident unless it was absolutely necessary, for fear of breaking the group "record." One man, whose leg had been broken, had himself called for by an ambulance every morning. He was transported thus to a specially built desk where he did clerical work on "disability assignment." His loyalty to the safety colors of the department touched him and his associates deeply. Incidentally three kinds of accidents go on record: (1) minor accidents; (2) disability assignments, in which the employee, unable to do his regular work, is sometimes given other tasks to do in the belief that, psychologically, he is better off working, and (3) major or "lost time" accidents. The supervisor

and the company physician, however, would necessarily disproved such "stunts" as these.

THE employer-employee picture today is interesting to contemplate from a safety angle. Once it was a habit to proclaim that 90 per cent of all industrial accidents were caused by the carelessness of workers—and let it go at that. Briefly, according to the National Safety Council, the problem narrows down to two important considerations. Accidents are caused by (1) unsafe conditions (employer) and (2) unsafe acts (employee). An accident is evidence enough that the victim has not been told correctly or in enough detail how to manage his job or that he has been negligent for some reason. Employers usually shelve the once customary "Whose fault was it?" in favor of "How could the accident have been prevented?" They realize only too well that accidents are wasteful They interrupt production. New men are expensive to train.

Three factors, manipulative skill, job knowledge and related information, are safety magnets. The industrial worker has to endeavor to develop these factors after the following steps have been taken by those in charge: giving the necessary information to enable the man to "catch on" to the demonstration going on; demonstrating the particular machinery or equipment in "slow motion"; testing, to see that instructions have been and will be remembered, and supervising consistently to see that safety practices are being followed in earnest. The telling, learning and demonstrating are done right at the individual worker's place in the plant, not in council chambers or on company bulletin boards.

WHAT still remains the leading cause of industrial accidents? Handling objects. Many a seemingly harmless job may suddenly send a man or woman home on "lost time" just when any sort of danger seems most remote, a

THE STICK "DYNAMITE JOE" HELD SO CARELESSLY IN HIS HAND MIGHT SEND MANY TO UNTIMELY DEATHS. YEARS OF LUCK AND MADCAP DARING HAD ENCOURAGED HIS HABITUAL INDIFFERENCE TO SAFETY.

pamphlet of the National Safety Council points out. The second big cause of trouble is moving machinery. Suppose an "ideal" plant were made up in miniature so that one could see at a glance the everyday safety practices of all workers concerned. Such hazards as oiling machinery in action, shifting belts by hand, allowing loose clothing to come in contact with revolving apparatus, standing directly in front of moving flywheels, and muttering "Why bother?" to such safeguards as goggles—these are not in evidence. Employees no longer think it the rôle of "he men" to ignore safety methods. It is obvious too that employers place a great deal of the responsibility for life and limb on each and every individual worker. Horseplay, forerunner of accidents, is taboo. Falls, faulty hand tools, falling objects, electricity, explosions and fire are old enemies of industrial workers. They pile up what still remains of accident tolls.

Statistics have their own niche in safety education. They may be startling, horrible, depressing or inspiring, depending on the subject in hand. It is no longer a secret, however, that a man, whether he be motorist, factory worker, vacationist or home owner, comprehends the need for safety education when, and only when, some incident or injury "strikes home." He likes to be the center of concern and to feel that he can contribute to further measures for his own comfort and safety. Hence the formation of employee safety committees in many companies.

One great manufacturing concern, which employs from four to six thousand employees, has a plant safety department composed of members of the staff and department heads who all meet once a month. Their task, not an easy one, is to make monthly inspections of the entire plant and keep the flame of safety awareness alive. Figures are displayed at all entrances of the plant to show the number of days that have elapsed since the last compensable accident; that is, an injury entailing absence of seven days or more. The disabling injury, involving loss of time just beyond the day on which the accident occurred, is not recorded. The company is not minimizing minor mishaps by any means. But the plan gives the plant doctor opportunity to take care of borderline cases by ordering the victim home for a few days when anxiety to "save the record" might have kept him from reporting trouble or prompted him to return too soon to work. Goggles are worn by practically 100 per cent of the employees in the plant. Maintaining interest in safety over a long period of time taxes patience and ingenuity to the utmost, safety workers report. A large rubber concern gets around this difficulty by having every employee serve in rotation on the employees' safety committee. Recommendations made by this group are never allowed to remain "dead letter."

In 1929 a national corporation awoke to a most pertinent fact that only 3.6 per cent of the accidents in the plant were due to faulty equipment. Heretofore the safety program had pounded right and left for mechanical guards on all machinery. But safety workers and officials had to turn from the mole hill to the mountain; 96 per cent of the accidents were due to mental lapses on the part of workers or supervisors.

What is known as a "Housekeeping Contest" was organized in the interest of neatness throughout the plant. Groups of executives comprise an inspection committee which turns appraising eyes on all departments, checking on such points as orderliness, cleanliness, absence of loose parts on the floor, appearance and condition of equipment, and condition of the aisles. No prizes are offered. The contest feeds on the fun of winning first-rate standing.

In case of any mishap in the plant, no one is made the "goat" if possible. The lesson to be learned is passed around for a generous helping to every one concerned. A girl whose job it was to handle an insulating machine had a finger twisted off one day. Investigation disclosed that she was distraught over impending tax bills and her mother's operation and had thoughtlessly started the machinery before the guards were adjusted.

IT USED to be that forty-four persons sustained lost time eye injuries every month here. Goggles came into fashion and regulation, and the number of injuries dwindled to seventeen by 1925; the average now is less than one each month. Dislike of goggle wearing was smoothed over by the introduction of skilled oculists who adjusted each pair to each individual. Even the ladies were given the benefit of any doubt for beauty's sake and were soon fitted with what appear to be quite ordinary glasses, able to give maximum protection, however. Safety shoes, ranging from the heavy laborer's footgear to street shoes, are sold right in the plant. Should the slightest injury occur under any circumstances, the victim has to go posthaste to the company hospital.

A safety style show in many a modern plant would present a bizarre collection of clothing. Molders, cupola tenders, furnace tenders and helpers in the foundry and forge are equipped with heavy duty metal or composition cup goggles with hardened lenses made according to the particular requirement, both in color and in composition. Leggings are nonlacing, nonbuckling and snap buttoning. They're held in place by hidden steel springs similar to the old bicycle pants' guard. Handlers of pig iron wear leather steel-faced gloves. Workers in the brass foundry are equipped with overalls and shirts with full length sleeves; this is a state labor law in Illinois. Goggles are mandatory on all tool grinding operations. The hands of all employees handling rough lumber on machines, such as swingsaws, ripsaws, automatic and glue jointers, are protected against cuts, slivers and scratches by leather-palm canvas gloves. Welders must wear tanned leather gloves, leather sleeves, chrome leather aprons, leggings and jumpers. Periodic inspection is made of this equipment.

The plant superintendent planning a safety education program may well ask, how can the common weaknesses of human nature ever be surmounted? Job difficulties, domestic troubles, financial worries, fatigue and lack of sleep snare many an otherwise good worker. All the supervisors can really count on is the previous inculcation of safety habits which will "stand by" a man until a danger point is passed. A worker in any one of the conditions described dislikes rules or restriction of any kind. He tends to be too low or too high spirited. Rashness steps in where accidents are wont to tread.

Periodic health examinations have been found to bear the following fruit: The employee is fitted into work that he can safely and efficiently perform; annual labor turnover is reduced; longevity of the employee is increased; the cost of medical care in event of illness or injury is reduced; absenteeism is reduced; the accident frequency rate is lessened, and the annual death rate from natural causes has gone down. These points were brought out at the Twenty-Fourth Annual Safety Congress.

Several hundred employees were once asked to select from a list of fourteen employment factors those they considered the most important. Highest in favor were steady employment, amount of pay, chance of promotion and safety. The four factors they considered dealt with most satisfactorily by the management were safety, adjustment of grievances, working conditions and hours of work, insurance systems and pensions.

In another firm the men began to resent the meticulous enforcement of safety rules. Without further ado the safety campaign was called off. In a month two men had been killed and another maimed for life. A committee decided that punishment for safety violations was preferable to serious or fatal injury in an accident.

SAFETY education, many employers have found, needs embellishment and fanfare least of all. As one safety supervisor put it, "Education for safety means knowing the job and doing it right." Executives must be not only willing but eager to do battle on behalf of safety education throughout the concern. Passive approval is not enough. There is nothing the worker notices more quickly or hides behind more readily than the unexpressed permission of the supervising personnel to violate safety rules for expediency's sake, "so long as nothing happens." Dynamite Joe had been biting off dynamite caps for some twenty years or so, serene in his disregard of a day of reckoning.

If the man who had hired Joe had said to himself, as the National Safety Council expresses it, "If I don't instruct this man properly and follow up this instruction with careful supervision to see that he thoroughly understands his work from a safety angle, I'll miss an opportunity that will never return. This man is new and wants to do as I want him to, because he needs a job. If I fail to start him off right and create lasting impressions right from the first, selfish interests and habits are bound to appear later, and he will be forever removed from those supervisory influences which should have been made permanent from the early days in the plant." Today the employer is endeavoring to make safety as natural as instinct and as firmly grounded as habit. This is inevitably reflected in the morale and quality of the work done by those under him and around him.

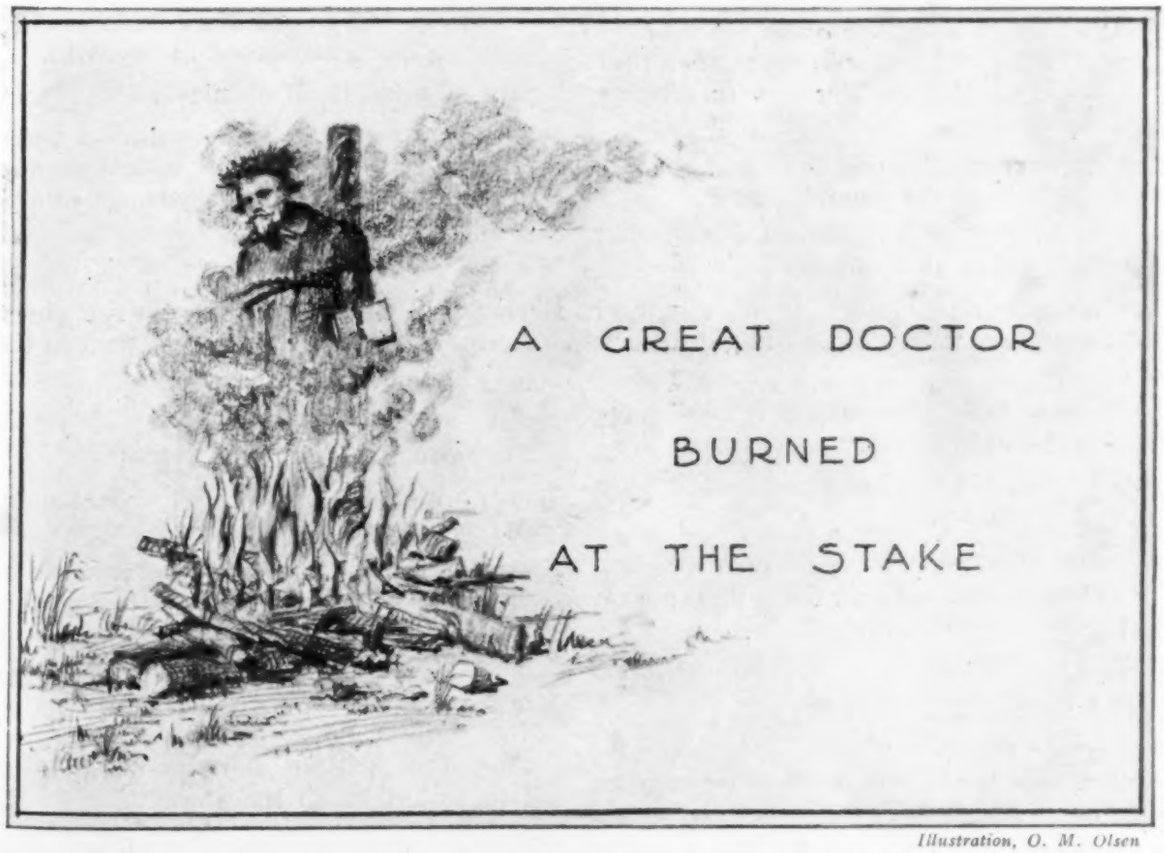
All successful safety work is firmly linked to the idea that accidents can be avoided. Accidents do not happen; they are caused. With this working principle behind it the widespread safety program in modern industry is gaining more and more momentum and is heading in the right direction. Conservation of man power is being recognized as the indisputable difference between business success and failure. This salvaging process is a first-rate stop-gap to constant turnover in personnel, mounting costs of dispensation, and interruption and production schedules. Safety for the worker reaches beyond the office and plant windows. It penetrates the homes and makes for thriving and more contented families. The worker who is mentally healthy, his shoulders unburdened by personal problems and fear of accidents, is more receptive to the highest good to be derived from his job. In other words, "the greatest safety appliance of all is the human mind."

This the progressive and safety-minded employer knows, and on this he acts. His safety program pays high dividends beyond what money alone can bring. Safety education in industry is by no means a bottomless pit for time, effort and money. The broader and more understanding the view of man, the wider the scope of business progress. Not long ago the nation held its breath while tremendous efforts were directed toward the eventual rescue of two men entombed in a Nova Scotia mine. Safety programs in industry undoubtedly cannot furnish drama to this extent, but the underlying principle is the same: A human life is the most valuable thing in the world.

[NOTE.—In the September HYGEIA, Eleanor Everet's topic will be "At Home to Safety."]

Curious Stories About Health

The Twelfth of a Series by MELVIN PRICE ISAMINGER



Illustration, O. M. Olsen

A YOUNG Spanish doctor, Michael Servetus (1509-1553), was led to the top of a hill, where, with a chain twisted around him, he was tied to a stake, and flames slowly reduced his body to smoke and ashes.

John Calvin, an influential theologian of the time, had imposed the penalty of death on him because they could not agree on religious matters. In his arm when he died, Servetus carried a book, penned by his own hand, which held one of the great physiologic discoveries of the age, the pulmonary circulation. This book was the forerunner of Harvey's classic work on the discovery of the circulation of the blood in 1628.

The Martin Family Vacation

Episode VIII: EAGLE SCOUT; LITTLE SISTER; GARBAGE; CAMP FIRES

By W. W. Bauer and Florence M. Bauer

CHIMES

MUSIC

INTRODUCTORY ANNOUNCEMENT: STATION ANNOUNCER: ACCORDING TO STANDARD COPY.

MUSIC

DAY'S ANNOUNCEMENT: STATION ANNOUNCER:

We have been following the vacationing family, in these health episodes, seeing how a good time can be enjoyed on a vacation and how good health can be preserved and promoted. You have heard how the family has protected itself against extreme heat, selected a camp site which is safe and pleasant, avoided dangerous water supplies and had a good time playing jokes on one another. Here they are again, just about to leave the camp where they have spent the night. You will remember that the family includes Mr. and Mrs. Martin, 18 year old George and 15 year old Mary. Listen:

GEORGE: And you're the one that had the big laugh on me about the water!

MARY: You didn't find out about the bad well until we had camp all fixed, did you?

GEORGE: We got you good water, anyway, and all you could use. What have you got to kick about?

MARY: Oh, you'd feel lonesome if I didn't have something, wouldn't you?

GEORGE: I wouldn't say lonesome, but it sure wouldn't feel natural.

MARY: What are you complaining about?

GEORGE: Plenty. Just go over the hill, and look at that garbage dump.

MARY: You can't camp three days in one place without having plenty of garbage.

GEORGE: That's all right, but—

MARY: And you and Dad insisted on staying here to fish. And what did you catch?

GEORGE: We might have caught something if you hadn't been along. All a fellow gets a chance to do, with a girl in the boat, is to bait her hook and untangle her reel.

MARY: I've seen you do it for girls and never make a peep.

GEORGE: Oh, yeah?

MARY: Yee-ah! Only, of course, it wasn't your sister.

GEORGE: The fish weren't biting today.

MARY: Sez you!

GEORGE: Did Dad catch any?

MARY: No, he was too busy lighting his pipe.

GEORGE: Anyway, what's all that got to do with the garbage dump? Did you think you could change the subject and get my mind off it?

MARY: What do you mean—mind?

GEORGE: That's all right. What did I tell you about the garbage, anyway?

MARY: I just don't seem to remember.

GEORGE: Here I go out there this morning, with a package of garbage—and boy, what a mess!

MARY: I piled it all up nicely.

GEORGE: I couldn't find it—until I waved my hand over it and the flies took a vacation. Is that any way to have a garbage dump for a camp?

MARY: What was I to do?

GEORGE: Good night. What were you to do! And here the can stood right next to the pile!

MARY: What can?

GEORGE: That's right. That's right! Act dumber than you naturally are.

MARY: Well at least I have to act dumb! It doesn't come natural.

GEORGE: Here is the can of crankcase oil that we saved when we drained the car the other night, and I told you to oil the garbage to keep the flies off. Did you do it?

MARY: Oh, here come Mother and Dad. Don't you think we'd better stop the argument, or one of us will be sent home, and then the trip would be so lonesome!

GEORGE: Lonesome? If you go, it'll be peaceful!

MARY: I'll help you with the garbage dump, George.

GEORGE *(whispering):* Yeah, now that Mother and Dad are in sight, you grafter.

MARY *(whispering):* Grafter yourself . . . *(aloud)* hello, you two, everything set?

MR. MARTIN: Yes, everything's packed in the car.

MRS. MARTIN: Have you youngsters been working or wrangling?

GEORGE: Take a look around. Would anybody know there'd been a camp here?

MR. MARTIN: That's the way to leave a camp ground. Give the next fellow a break.

MRS. MARTIN: So we're all ready to start?

GEORGE: Not quite. We've got to finish up at the garbage dump.

MR. MARTIN: The garbage dump? I thought all that would be done by now.

MARY: Well, you see, Dad, we weren't supposed to hurry, so—

MRS. MARTIN: That's all very well; but we weren't expected to shirk, either.

GEORGE: Well, Mary was supposed to take care of the dishes and the garbage, and I was to tend to the firewood and the tents, and Dad to look after the car and the packing, and Mother to cook—

MR. MARTIN: Wait a minute. We know all that. What's the idea of repeating it?

GEORGE: Oh, I wouldn't like to say.

MARY: Oh, go on and tell; you know you're dying to.

MRS. MARTIN: I think this is for you to tell, Mary.

MARY: There isn't much to tell—

GEORGE: There ain't anything to tell. Come on, kid, let's finish up that dump and get goin'.

MARY: O-kay. *(The children depart.)*

MRS. MARTIN: Now I wonder what's up?

"I TOLD YOU TO OIL THE GARBAGE TO KEEP THE FLIES OFF. DID YOU DO IT?" GEORGE ASKED.

"AREN'T YOU SORRY YOU REFUSED TO COOK TONIGHT, MOTHER?" MARY ASKED. "SHE SHOULDN'T BE. AFTER ALL THE CHEAP TREATS SHE HAS GIVEN US, SHE SHOULD HAVE PLENTY OF MONEY," MR. MARTIN TEASED.

MR. MARTIN: Nothing, probably, except that the peaceful children are living in the usual harmony.

MRS. MARTIN: Harmony? Hah!

MR. MARTIN: Well, how do you like the trip so far?

MRS. MARTIN: It's the most fun I've had in a long time. It's great to be lazy. Just think, John, it's three days since that car turned a wheel except to take us to the movies last night. It's wonderful to do just what you want when you want.

MR. MARTIN: Here come the kids again.

GEORGE: Say, are you folks in a hurry?

MRS. MARTIN: We're all ready to start.

MARY: Well, I guess we'll have to wait a little.

MR. MARTIN: Why?

MARY: Oh, I forgot to burn the garbage each day; and now we've got it started, the old Eagle Scout here won't go away and leave it burning.

MR. MARTIN: Right enough, Son.

GEORGE: It won't take long, though. I've got a lot of oil on it, and there's plenty of paper. It ought to go fast.

MRS. MARTIN: I can see the smoke now.

GEORGE: That's the oil.

MR. MARTIN: I know what we'll do.

MARY: What?

MR. MARTIN: Let's go down and fish off the pier for a while.

GEORGE: O-kay with me. The tackle is right on top of everything. No trouble to get it out.

MRS. MARTIN: But I thought we were all ready to start?

MR. MARTIN: Why, my dear! Whose idea was it that we should take things easy and do just as we pleased? I please to fish!

GEORGE: Me, too.

MARY: Who's going to watch the fire?

GEORGE: Who's been forgetting to burn the garbage every day?

MARY: Oh, all right, go on and fish. I didn't want to fish anyway.

GEORGE: Great. Come on, Dad. Now we can do some fishing, if we don't have to have the women along.

MRS. MARTIN: I like that!

GEORGE: 'S all right, Mom. We like you. All except on fishing trips. Come on, Dad. Don't forget your fire, Sister dear!

CLOSING ANNOUNCEMENT: STATION ANNOUNCER: *Perhaps there isn't much of a health lesson in this experience of the vacationing family—for them. But in giving the other fellow who may follow them on the camp grounds a better break,*

they have helped some one else to escape insanitary conditions which, though they may not actually be unhealthful, are certainly unpleasant and likely to detract from a vacation. And the Boy Scout wouldn't leave the fire unwatched. Good for him! If more tourists and campers did that, there'd be more and better forests in which the rest of us could spend a healthful and delightful vacation.

MUSIC

CHIMES

Episode IX: LET'S EAT—BUT WHERE?

STATION ANNOUNCER:

Naturally, in a health program it is the health aspects of the vacation that are being emphasized, with the object of demonstrating how vacation pleasure need not be interfered with in order to safeguard the health of the participants. Now we hear the family buzzing along in their not-too-new car and discussing the weighty question of the next meal. Let's listen: (The hum of the motor is heard continuously until otherwise indicated.)

MRS. MARTIN: I'm tired of cooking.

MARY: And I'm tired of bacon and eggs and cold cereal.

MR. MARTIN: And weak coffee?

MRS. MARTIN: Is that so? You've had weak coffee just once since we started, and that was because you wouldn't wait long enough for the coffee to amount to something. And as for the cold cereal—

GEORGE: Don't let 'em hand you anything, Mom.

MRS. MARTIN: Don't worry. I can take care of myself. And just for that, we're going to eat in a restaurant tonight, and Dad is going to pay for it—and I hope the coffee is terrible.

MR. MARTIN: Nice woman I married.

MRS. MARTIN: And I hope the meat is tough, and the potatoes are burned, and the milk is sour—

GEORGE: —and the bread dry and the butter strong—

MARY: —and the soup too salty and the pie crust tough—

MRS. MARTIN: Can anybody else think of something pleasant?

MARY: —and the napkins damp and the tablecloth dirty—

MRS. MARTIN: No, sir, we're not going to pick out that kind of a restaurant.

MR. MARTIN: Aha, the health sleuth is off again!

MRS. MARTIN: You'll be glad she was, when you get back home safe and sound.

GEORGE: We never will, unless Mary slows up a little—good night, I didn't think the old can would do it.

MARY: Why, I'm not driving fast.

GEORGE: Oh, no, only 48 to 55, depending on the hills.

MR. MARTIN: There's a town ahead.

MARY: Is that where we eat?

GEORGE: Maybe, if you don't run through without noticing the town.

MARY: Oh, shut up. You make me tired. I never scraped as many fenders as you, anyway.

MR. MARTIN: Well, Mother, here's your chance to pick a restaurant. How are you going to go about it?

MRS. MARTIN: Just use my eyes.

MARY: But, Mother, you can't very well walk out again after you are all settled, even if you don't like it.

MRS. MARTIN: Oh, yes, I could, Mary. But I know a better way than that.

MR. MARTIN: We're all ears. Slow up, Mary. Didn't you see the village limits sign?

MARY: Yeah, but I was waiting for my big brother to squawk.

GEORGE: That's once you got left.

MR. MARTIN: Wait a minute, you two. Let's hear about Mother and her restaurant-picking ideas.

MRS. MARTIN: I'll be more tactful than just to go in and sit down and then get up and walk out. I'll go in and inquire about roads or about where to buy a certain kind of gas, and while I'm in there I'll keep my eyes and ears open.

MR. MARTIN: Aha, the master mind is hitting on all six.

MRS. MARTIN: Eight, my dear. Be up to date.

GEORGE: Well, here's the business district—did you hear what I said, business district!!

MARY: Two whole blocks of it.

GEORGE: And please take notice of the sign.

MARY: Oh, I saw it. "Speed limit twenty miles." We're doin' at least that.

GEORGE: Don't overlook the rest. "Regulation strictly enforced."

MARY: Say, let me alone, will you?

GEORGE: Well, I don't want you to go to jail again.

MARY: Again?

GEORGE: Yeah, again. The time you killed that cop in Illinois.

MARY: I never did kill any cop in Illinois.

GEORGE: Well, you just as good as killed him. He was a new cop, and you got his uniform dusty.

MARY: Could I help it if he motioned me forward and then stepped in front of me?

MRS. MARTIN: Oh, stop the arguing, and stop the car, too. There's a restaurant. *(Motor stops.*)*

MR. MARTIN: That's four we passed while the argument was going on.

MARY: Why, Dad, there aren't more than two in the town.

MRS. MARTIN: Well, wait here, anyway, while I go in.

MARY: I want to go along.

MRS. MARTIN: All right. Come on. Don't step in that oil—if you will wear your white shoes to travel.

MARY: They're still clean.

MRS. MARTIN: It's a wonder. Here we are. Let's look in the window first.

MARY: No dirty tablecloths in here.

MRS. MARTIN: Good reason why. The table tops are enameled; and they're not clean.

MARY: Look here. A hole in the screen as big as your fist.

MRS. MARTIN: Not so good this far.

MARY: Well, let's go in.

MRS. MARTIN: Yes, there's the proprietor. How do you do?

PROPRIETOR: R-r-r-r. Howdy.

MRS. MARTIN: Can you tell me the way to Spottiswoode?

PROPRIETOR: What's that place?

MRS. MARTIN: Spottiswoode.

PROPRIETOR: Mmm. Never heard of it.

MRS. MARTIN: I see. Is there a good hotel here?

PROPRIETOR: Eat or sleep?

MRS. MARTIN: Maybe both.

PROPRIETOR: Can't get a decent meal in this town—'cept here. The hotel's down the road a piece. The beds ain't so bad, if you're tired enough.

MRS. MARTIN: Is it clean?

PROPRIETOR: Clean? Sure. Clean as this place.

MRS. MARTIN: H'm. Yes, I see. Thank you very much.

PROPRIETOR: Supper's all ready here. Nice an' hot. Fifty cents.

MRS. MARTIN: Thank you. I think we're not quite ready to eat.

MARY: Come on, Mother. Dad's motioning to us. Wonder what he wants. *(There is a pause; then a door slams.*)*

MRS. MARTIN: Ugh! Wouldn't that destroy your appetite?

MARY: I'd like to see the kitchen, if that's what the front looks like.

MRS. MARTIN: Did you see those dishes?

MARY: And the napkins?

MRS. MARTIN: And the glasses and the dirty towel he had stuck in his belt.

MARY: And flies! All over the place. Say, Mother, where's Spottiswoode?

MRS. MARTIN: I'm sure I never heard of such a place. Did you see that man's finger nails? They could have been used to plant a garden.

MARY *(giggling)*: Mother, did you see the raisin pie?

MRS. MARTIN: No, I didn't notice.

MARY: Well, probably you wouldn't. It was over near me. I thought it was raisin at first, but it wasn't. I waved my hand over it, and presto, it was apple!

MRS. MARTIN: Mary!!

MARY: Well, Dad, what were you signaling for?

GEORGE: Say, we saw a barbecue down the road. Maybe that's a good place.

MR. MARTIN: How was the restaurant?

MRS. MARTIN: Oh, it was just awful. Dirt everywhere—dirty dishes, dirty silver, greasy glassware, flies all over the place—

MARY: Includin' the apple pie—

MRS. MARTIN: Mary, if you mention that again, I'll skin you!

MARY: And you ought to have seen the proprietor's hands and his dirty apron—

MRS. MARTIN: And all the food exposed—

MARY: And the family towel stuck in his belt—

GEORGE: Come on, let's go find a barbecue and eat. I'm starved!

CLOSING ANNOUNCEMENT: STATION ANNOUNCER:

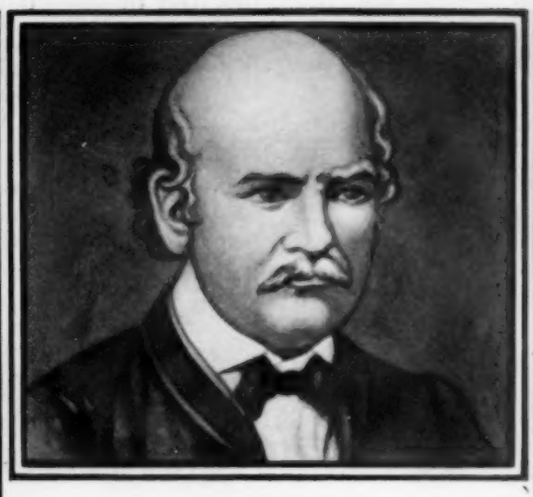
And so they rejected the restaurant. Quite right, too. Not all places are as bad as this, but you can tell a good restaurant from a bad one quite easily. Are the people clean? Are the clean dishes protected from dust and handling? Is the food under glass or out of sight? Are there no flies, or at least only a few? Is the place screened, and are the screens in good condition? Are the menu cards clean? Is there a wholesome odor or none at all? You can't always see the kitchen, but if the front is dirty you may be sure the back is worse. And if the front is clean, while you can't be quite sure, it's at least a better chance than if it were otherwise.

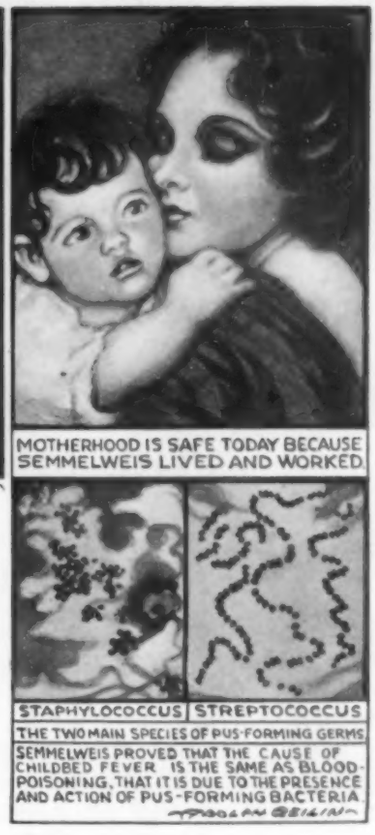
MUSIC

CHIMES

(Continued on page 704)

FOR THE ETERNAL BLESSEDNESS AND BENEFIT WHICH HE CONFERRED ON THE CHILDREN OF THE WORLD BY REASON OF HIS DISCOVERY OF A WAY TO SAVE THE LIVES OF COUNTLESS PREGNANT WOMEN, THE NAME OF SEMMELWEIS WILL RANK WITH THE GREATEST AMONG THE IMMORTALS IN MEDICAL SCIENCE.




MOTHERHOOD IS SAFE TODAY BECAUSE SEMMELWEIS LIVED AND WORKED
STAPHYLOCOCCUS
STREPTOCOCCUS
THE TWO MAIN SPECIES OF PUS-FORMING GERMS
SEMMELWEIS PROVED THAT THE CAUSE OF CHILDBED FEVER IS THE SAME AS BLOOD-POISONING, THAT IT IS DUE TO THE PRESENCE AND ACTION OF PUS-FORMING BACTERIA

IGNAZ PHILIPP SEMMELWEIS

(1818-1865)

By

ADOLPH BEILIN

A brief illustrated biography of a pioneer physician who, through the discovery of the causation of puerperal fever, elevated obstetrics to an aseptic branch of medical therapeutics and thereby became the first scientific obstetrician.

THE history of medicine is composed of many dark chapters. It has been the lot of many scientists who have conferred immense benefits upon mankind to be subjected not only to indifference, opposition and persecution by their contemporaries, but even crucifixion by bigots. Ignaz Philipp Semmelweis was a conspicuous example of this kind of treatment. The story of this man and his great discovery is bound up with humiliation, slander, disgrace and tragedy, and he died insane at the age of 47.

Semmelweis was born at Budapest, Hungary, July 15, 1818. A thoroughgoing Hungarian by birth and temperament, he was also an alert, industrious student brimming over with mental exuberance. Imbued with high ideals and too honest to make terms with pompous falsehood, he was predestined for the road to sorrow, bitterness and tragedy. Soon after the completion of his elementary schooling in Hungary, he matriculated at the University of Vienna to pursue the study of medicine, taking the usual courses for a period of one year. He then spent the second and third year at the University of Pesth; passing the remaining years of undergraduate study in the University of Vienna and obtaining his degree of Doctor of Medicine in 1844. Two years later he was appointed an assistant at the first obstetric clinic in the Vienna Lying-in Hospital. Almost at once he became greatly concerned over the cause of the frightful mortality from childbed fever among the patients of the clinic. During his first year in this hospital, there occurred 565 deaths from puerperal fever alone.

AT THIS time in Vienna and Europe, the status of the etiology of puerperal sepsis was extremely chaotic, and the results of this confusion were appalling. Semmelweis noted with dismay that when he and the students came to his ward to examine women in labor they came directly from the autopsy room. One day while present at a postmortem examination of a medical colleague who had died of a dissecting room wound, he observed the similarity of the pathologic findings in this case to that of women dying of puerperal fever. He soon demonstrated that both were identical instances of general blood poisoning.

Semmelweis thereby proved that all infection comes from without, and that the etiology of puerperal sepsis is the same as wound poisoning; he proved further that washing

hands with chlorinated lime before making examinations of delivered women tended to prevent puerperal fever. He thus became the first scientific obstetrician.

Immediately after the introduction of antisepsis into obstetrics in the Vienna Lying-in Hospital the deaths of mothers began to be controlled. And then Semmelweis' troubles began. With the exception of Ireland and England, his doctrines met with little support in Europe, and the persistent opposition to his work resulted in the loss of his position in the hospital. By an odd twist of fate, too, this savior of countless mothers, himself fell a victim to pyemia, which he had discovered to be identical with puerperal fever, and which he sought to eradicate. Two days after his commitment to the Vienna Insane Asylum, it was discovered that he had a wound in his hand, the result of his last gynecologic operation. Gangrene, followed by cellulitis, set in, and soon he too lay dead, himself the object for a postmortem examination.

THE MARTIN FAMILY (Continued from page 702)

Episode X: THE HEALTH SLEUTH AND THE BARBECUE

The imaginary family are on their travels across country in search of a good time on their vacation. They are finding it, too. Incidentally, they are not forgetting about their good health while on tour and are trying to avoid unsafe water and other health hazards while they travel, in order that they may not have cause to regret their vacation after their return. The last information we had about them, they were looking for a restaurant, and they found one, but it wasn't the kind of place they liked. So they went on, hoping that the barbecue stand down the road would prove better, for they were hungry, and Mother had declared her independence of cooking for that day. Listen:

MARY: Well, here's your barbecue. Let's eat.

GEORGE: Does it pass the board of censors, Mom?

MR. MARTIN: It's got screens.

MRS. MARTIN: And the food is in glass cases.

MARY: So are the dishes.

GEORGE: And the girl back of the counter's got a clean apron.

MARY: What color hair has she got?

GEORGE: Brown. Sa-ay, what's it to you?

MARY: I just thought you'd surely notice that.

GEORGE: Yeah, well I noticed that you didn't overlook the pink-haired boy a couple of days ago.

MARY: Where was that?

GEORGE: While I was changing the tire. You ate two hot dogs. And at home you don't care for hot dogs, thank you!

MR. MARTIN: I don't know about all the sanitation stuff in these eating places, but I think this is a good place to eat.

MRS. MARTIN: Why?

MR. MARTIN: Did you notice that the first place we stopped wasn't doing much business?

MRS. MARTIN: Yes.

MR. MARTIN: And this place is crowded.

MRS. MARTIN: Well?

MR. MARTIN: Follow the crowd. There is usually a good reason why an eating place is busy. The home town people know what's what. And since we've stopped here, I've seen three people come in from the stores across the road, who look as if they belonged there.

GEORGE: Gee, now we've got Dad started as a health sleuth.

MARY: Yes, Dad, where did you accumulate all the lore?

MR. MARTIN: Just by keeping my eyes open. An excellent example, by the way, for the younger generation; that is, if there is anything that they can still be taught.

GEORGE: Sock!

MARY: I suppose you think that doesn't mean you, too?

MRS. MARTIN: And now look over there. I'm sure we want to eat here.

MARY: Where?

MRS. MARTIN: Over there, next to the door. A box of empty milk bottles.

GEORGE: What about 'em?

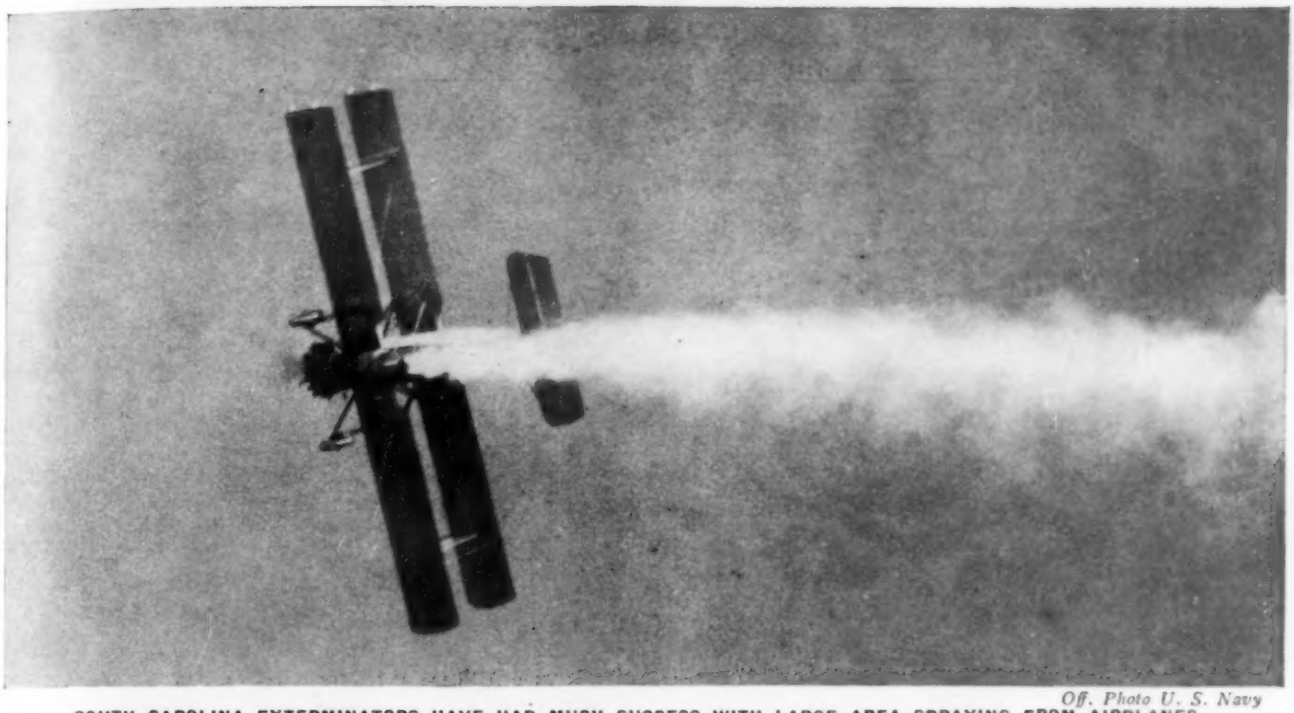
MRS. MARTIN: Two things. First, it says on the case, "Pasteurized milk from tuberculin tested cattle."

GEORGE: Sure. What of it?

MRS. MARTIN: That's the kind of thing we want. Second. Look at the empty bottles in the case. They're clean, and they're turned upside down so they'll stay clean.

MARY: What's that got to do with where we eat?

MRS. MARTIN: Any place where they are as particular as that *(Continued on page 767)*



Off. Photo U. S. Navy

SOUTH CAROLINA EXTERMINATORS HAVE HAD MUCH SUCCESS WITH LARGE AREA SPRAYING FROM AIRPLANES.

Impending Mosquito Massacres

By S. R. WINTERS

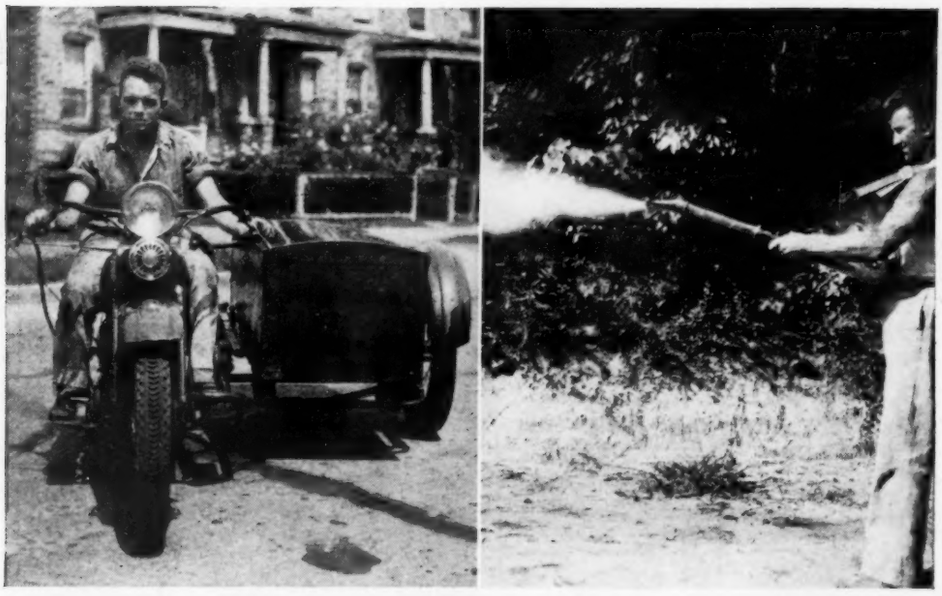
COMING as an unpleasant aftermath in the wake of spring floods and shattering storms throughout our country, the inevitable menace of increased mosquito hordes constitutes an amazing problem which has taxed human ingenuity and resources to the utmost toward a proper solution. Consigning this familiar pest to the limbo of insect extinction involves the direct ratio between rendering sterile all obvious or dormant production sources, coalescent with effective destruction of the annually present and avenging multitude.

Acting with a view toward complete prenatal mosquito extermination as well as successful elimination of a potential parenthood, the United States government has at various times appropriated vast sums for certain phases of its continual combat against an apparently frail but insidious enemy.

Recently under the guise of the Works Progress Administration an outlay of $2,417,000 was granted for a total of 103 projects designed to erase mosquito breeding grounds in the four states of Pennsylvania, New Jersey, Delaware and Maryland. Approximately 3,300 relief workers are engaged in providing new drainage ditches and reopening miles of former canals, natural streams or forgotten trenches that have become clogged or otherwise obliterated during passing years. In Sussex County, Delaware, a 30,000 acre range is being reconditioned by proper drainage while the great cypress swamp of that state, comprising 16,000 acres, has known the keen surgery of several giant incisions penetrating through to the Atlantic Ocean and removing forever from the infected area a sluggish water surplus stagnating in the direction of Chesapeake Bay.

In like manner, southern New Jersey, long regarded as a veritable "mosquito incubator," is scheduled for a redredging and clearing program, with Cumberland County and Haddon Heights occupying prominent places in the foreground of development. In the latter locality a corps of 600 workers is converting a 48 acre swamp into a recreation center by means of Uncle Sam's $274,119 allotment for the purpose. Since much of southern New Jersey lies below sea level the region is characterized by extensive marshes that gradually absorb even the improved highways, raised well above the surface during incipient stages of road construction, only to be engulfed later by the eager clut h of the spongy mire. Naturally mosquitoes thrive amid these surroundings, and nothing short of carefully executed plans will effectually remove their menace.

Included also in the group of government agencies that have massed forces against the spindling ogre are the Civilian Conservation Corps, the Bureau of Entomology, the Public Health Service and the Federal Emergency Relief Administration. Under the tutelage of their organized attack, records reveal an indis-

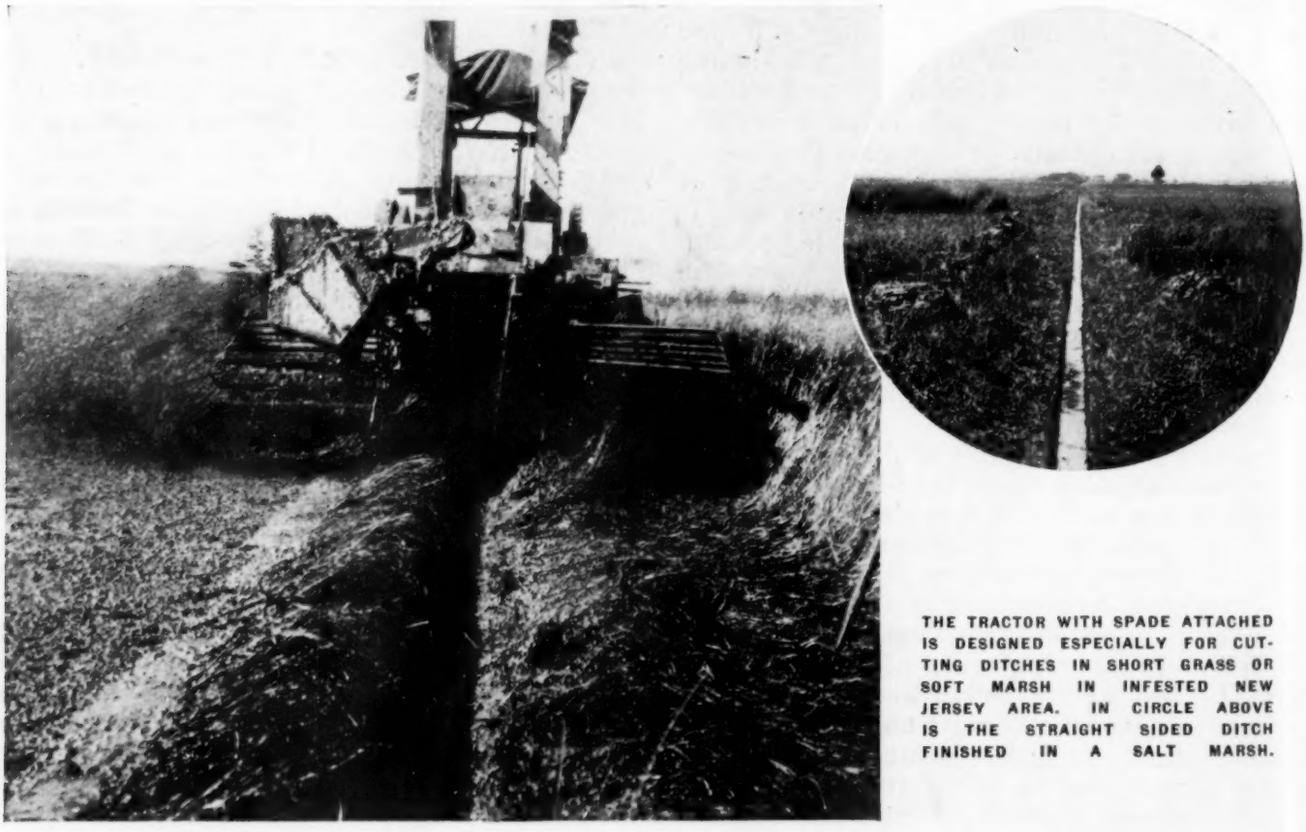


THIS MOTORCYCLE HAS A SIDE-CAR EQUIPPED WITH A PRESSURE TANK WHICH CONTAINS TWENTY GALLONS OF OIL. IT IS USED FOR OILING WATER SEALED CATCHBASINS. NEAR PHOTO SHOWS HAND SPRAY MACHINE IN USE.

criminate total of swamp tracts aggregating 3,277,150 acres, drained by more than 28,000 miles of drainage ditches. Sponsored by the Federal Emergency Relief Administration, the Civil Works Administration has expended an approximate $2,000,000 in an effective mosquito control program, embracing thirty-two states and the District of Columbia. While efficient drainage remains of paramount importance, the clearing away of débris following floods and tornadoes or a natural accumulation of underbrush is equally essential. For this reason the nation-inclusive disbursement involved a 400 mile clearance along stream banks and disposed of 7,600 acres of bush growth.

Classified roughly, mosquitoes belong to one of two major groups; namely, the exceedingly annoying variety that adds to discomfort rather than contagion, and the more vicious type that constitutes a virtual culture tube of death and disease to inoculate the human blood stream by means of a proboscis resembling a hypodermic needle.

Members of the second coterie include the Anopheles, or malaria bearer, together with other types conveying infectious yellow fever. Certain species have also been associated with the transmission of dengue, a febrile epidemic disease of the West Indies, and filariasis, known in medical annals as elephantiasis, an ailment



THE TRACTOR WITH SPADE ATTACHED IS DESIGNED ESPECIALLY FOR CUTTING DITCHES IN SHORT GRASS OR SOFT MARSH IN INFESTED NEW JERSEY AREA. IN CIRCLE ABOVE IS THE STRAIGHT SIDED DITCH FINISHED IN A SALT MARSH.

A MOSQUITO TRAP, ILLUMINATED AT NIGHT, YIELDS A HEALTHY CROP OF THE PESTS THE NEXT MORNING. THIS DEVICE IS USED MORE IN THE STUDY OF THE DIFFERENT VARIETIES WHICH ARE PREVALENT IN CERTAIN DISTRICTS.

distinguished by acute enlargement of the extremities.

A majority of these maladies are common to tropical countries, yellow fever, for instance, being found always present only in certain portions of South America and South Africa.

With the advent of extensive international air routes a question arose as to whether or not mosquitoes carrying yellow fever might be transported into the United States aboard planes. Ships also are mosquito carriers.

By way of experiment, officials sprayed mosquitoes from South America with a color fluid; then the "painted pests" were placed on board airplanes bound for the United States. At each stop enroute a careful check-up was made to ascertain the number of mosquito "passengers" remaining aboard, and at the last stop a count was made to determine how many reached this country. Their examination disclosed that the insects actually journeyed by plane and, moreover, that travelers were bitten by them during the trip. Since the incubation period for yellow fever is six days, and planes travel from the contagion zones to this country in three days, it is entirely possible that either a passenger who had been unknowingly inoculated or a mosquito infested with the disease might effect an entry.

With this information at hand regarding the more adventurous, "air minded" mosquito type, the Public Health Service undertook a series of tests to evolve a powerful but noninflammable spray for use on board airplanes. The search ended with a solution, perfected by Dr. Charles L. Williams of New Orleans, which consists of flowers of pyrethrum mixed with light oils.

A DRUM OF OIL AND 500 FEET OF HOSE EQUIP THIS MOTOR BOAT TO THROW AN EMULSION OF OIL AND WATER A DISTANCE OF SIXTY-FIVE FEET OVER MOSQUITO INFESTED AREAS.

Planes are now sprayed thoroughly with the new preparation at each port before taking off; and on entry into this country they are examined to determine the presence of the unwelcome pests. Inspectors report a maximum of about one mosquito to every ten planes entering the United States from foreign ports, with this limited number being destroyed immediately by the pyrethrum spray.

The somewhat fantastic procedure of painting mosquitoes has demonstrated gratifying results other than those noted aboard airplanes. By this means the habitat of the errant villain may be located and eliminated, and all insect characteristics may be observed for the purpose of permanent eradication. Chicago has adopted the plan, and accordingly various colored dyes will be distributed over breeding ponds near Oak Park. When the artificially colored pests take to the air they will be trapped and their breeding place definitely established and destroyed or otherwise rendered "mosquito proof."

Accomplishing practically the same purposes in a different manner is an unusual mosquito trap developed by Dr. T. J. Headlee, U. S. Department of Agriculture. This device consists of an iron cylinder, bearing in its front portion an electric light bulb which attracts mosquitoes to the brilliant interior. A reflector is placed back of the light bulb, and behind that is an electric fan. A cyanide-collecting jar is fitted just below and in front of a screen which is used to close the rear of the cylindric chamber. A wind vane on ball bearings equips the cylinder to face the wind at all times. An ordinary 110 volt electric circuit provides current for operation of the device, which may be turned off or on by means of a clock and switch. Federal entomologists placed twenty of these traps in the Chesapeake Bay area and captured 3,000 mosquitoes in one trap during a single night. These traps were designed not so much for "here and now" destruction of the pests as for a concentrated study of the varieties prevalent in a locality.

Occupying a prominent place in the work of insect eradication, the airplane leads the way in planned mosquito massacres by administration of lethal prescriptions over wide districts. Initial attempts were culminated at Bamberg, S. C., where 500 pounds of paris green and a like amount of soapstone were dusted over a 500 acre tract from a plane. The method proved satisfactory since vegetation and water surfaces alike were impregnated with the poisonous dosage. A special arrangement is necessary in the form of a hopper which is installed as near the plane's center of gravity as possible. The outlet of the hopper has a Venturi device, and wind entering the open forward section tends to force the dusting powder outward from the tank toward a narrow neck projecting below the fuselage. Encouraged by a tapering rear section, poison may be whipped to a spread of 40 feet beyond the tail of the plane.

Airplane dusting promises to replace crude or fuel oil surfacing of marsh lands by means of boats which left their unctuous tracery over stagnant pools. This system was among the earliest known forms of mosquito control development and had for its object the smothering out of larva just beneath the surface of the water.

Numerous larvacides, sprays and insecticides have been developed during recent years with varying success, among the latest being a mixture which destroys mosquitoes but does not mar the appearance of plants and shrubbery.

Even more recently three scientists from the University of California Citrus Experiment Station devised a nicotine vaporizer which is proving effective in a war against insects of all descriptions. The vaporizer first atomizes the poisonous nicotine sulphate and then applies heat for evaporation leading to formation of a lethal vapor instead of the usual spray method. The vapor penetrates directly into infested foliage and is providing improved results over nicotine sprays commonly used.

A novel but somewhat uncertain scheme to control mosquitoes is exploited from Soviet Russia where the Commissariat for Health is experimenting to determine the possibility of using cattle in their war against the insects. Since cattle attract mosquitoes 100 times more than human beings, without injury to the animal, the Russian experimenters believe a bovine barrier for protection of inhabitants living near marshy breeding grounds will afford ample security. However, much depends on the species of mosquitoes infesting the areas and on their tendencies. Some genera prefer human blood and enter houses readily while others are content to feed on the blood of animals.

While nations as a whole and more especially our own government may achieve greater mass extermination of the pests, the individual citizen is not devoid of responsibility. Frequently, all unknown to a resident, his own back yard is providing a luxurious habitat for the insect that occasions his extreme annoyance. A discarded tin can or other casual receptacle partly filled with torpid water may furnish an ideal background for his entire summer's discomfort. Despite the fact that he is "mosquito-conscious" as manifested by carefully screened windows, he views with dismayed perplexity the besieging horde of hungry pests that continually bombard him.

As in all betterment programs the problem involved is not entirely a national obligation but belongs in the repertoire of each citizen as well. For after all, in many instances, apparently trivial actualities comprise or at least lend support to a more closely affiliated evolution that dovetails into well defined future progress.

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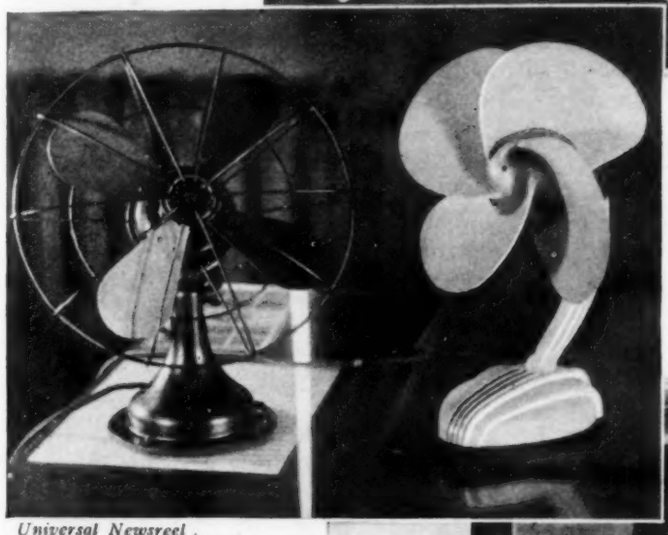
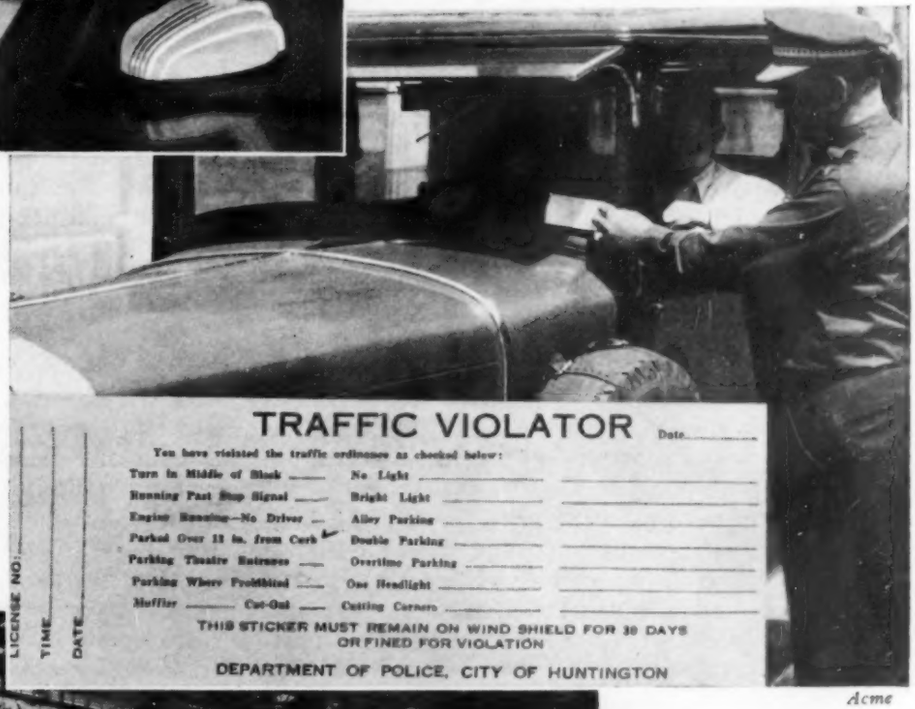
WASH DAY IN THE DIONNE NURSERY FINDS THE QUINTS INSPECTING THE EQUIPMENT.



Universal Newsreel from Soibelman Syndicate

THE NEW ALL-SAFE ELECTRIC FAN WITH FLEXIBLE RUBBER BLADES IS SHOWN IN COMPARISON WITH THE OLD METAL TYPE.



Acme

THE "SCARLET LETTER" IS THE THIRTY DAY STICKER AFFIXED TO WINDSHIELDS OF HUNTINGTON, IND., TRAFFIC RULE VIOLATORS.

THIS WADING POOL IN AN ELEVEN ACRE PLAYGROUND PROVIDES ENJOYMENT FOR THE CHILDREN OF THE NEW YORK CITY TENEMENTS.

Ewing Galloway

Mental Attitudes vs. Health

By SMITH ELY JELLIFFE

EVERYDAY SPEECH is the barometer of everyday living. It reveals the close connections between mental and bodily states. An alert, hopeful and interested mental attitude toward life is conducive to health, whereas lack of interest, pessimism and hostility often go hand in hand with the dyspeptic, the gouty and the apoplectic. Yet few persons realize to what extent these generally accepted truisms are applicable or how deep down into bodily structures the principles may penetrate.

Almost every doctor who has carefully read Osler's "Practice of Medicine" can tell how Sydenham, called the English Hippocrates, relates that attacks of gout follow explosions of anger, and how John Hunter, one of England's outstanding physicians of the eighteenth century declared, "My life is in the hands of any rascal who wishes to annoy and tease me." And so it happened. He died of an attack of angina pectoris following just such a provocation to anger.

The ancient Romans knew that anxiety and worry could precipitate an attack of exophthalmic goiter, and the World War experience further illustrated this. One might peer back into the shades of Greek medicine to justify the common beliefs, here noted, which are as old as any records in human history.

But I would here state certain ideas concerning mental attitudes which only a few of the ancients intuitively recognized, but which the poets, the dramatists and the philosophers seemed to realize. It has been only within the past forty years that these intuitions could be made the subject of scientific research and justify the hope once expressed by Claude Bernard, the great founder of experimental physiology: "When the physiologist, the poet and the philosopher can talk the same language and understand each other, then a scientific medicine will have arrived."

Such a time has just commenced, and truly scientific methods are being developed whereby the intimate relationships of mental attitudes to health can be made more serviceable for a host of heretofore intractable human ills.

Mens sana in corpore sano, a healthy mind in a healthy body, has been a catch word for centuries. As in many popular slogans the truth is better told by a reversal of the formula: A healthy body in a healthy mind. Democritus, an ancient wise man, stated the situation in this manner: "It is mete for men to take account of soul [and by psyche, the soul, was meant mind] rather than of body, for perfection of soul corrects wretchedness of the bodily tabernacle but bodily strength without reasoning makes the soul not a whit better."

Where is that unity to be found in the body which is the equivalent of the mental state or the plan of the body; and what relations have mental attitudes toward such a plan or pattern which is subserved by the organs of the body?

The point of view to which attention is directed is that each organ of the body is a bit of structuralized experience, somewhat specialized and differentiated to do some special task not only for its own good but, what is more important, for the good of the entire plan of the whole body. In short, if any organ of the body gets out of step or harmony with the plan, something is going to happen which we call "unhealthy" or dis-ease.

THEN the problem narrows down to the question, How can a mental attitude affect the harmonious working of an organ carrying out its specific as well as its generalized program? This calls for a more precise statement concerning the definition of "mental attitude" and a clearcut picture of the general plan of the body.

It would be simple to define mental attitude if one were content to take an individual's conscious construction of the matter. As the Psalmist wrote, "In my haste I said, 'All men are liars.'" Present-day psychoanalytic psychiatry says, "All men rationalize." There are few of us who can escape putting what is to us a pleasing construction on our attitudes. We all indulge in "autistic thinking," that is, wish fulfilling; and the "truth, the whole truth and nothing but the truth" is not to be found in our conscious thinking. This is an amusing part of the procedure of the oath in a court of law.

In other words the whole truth about our life patterns and our cravings concerning them, our mental attitudes, is a strange mixture of our conscious and our unconscious with the odds, millions to one, on the unconscious.

And what about the absolute life pattern? You have heard it described over and over again. Hunger and love comprise it. This is the simplest formula, which the poet Schiller has given us.

Then, reduced to its least common multiple, the problem resolves itself to an understanding of our unconscious attitudes toward this creative

pattern, which for short we call the sex pattern, and the manner in which the unperceived or dimly felt attitudes interfere with the work of health.

For purposes of convenience such interference may be dealt with under three headings, or more technically at three levels of the body's activities: (1) those which take place within an organ or a group of organs and make up most of the problems of internal medicine; (2) those which interfere with the general functions of sensation and motion, usually called neurologic, and (3) those which involve the actions of the body in its relation to society, more often called psychologic, psychogenic or sociogenic. Accident is put aside entirely.

Neurologic dysfunctions are frequently manifested. An attractive young unmarried woman, about 23 years of age, an accomplished musician, complained of an intense pain between her shoulder blades whenever she tried to play the violin. After a while she noted that she resorted to shifting and tilting her pelvis in order to gain some comfort while she played. Thus after a time she began to get a spinal curvature. Still the pain was severe.

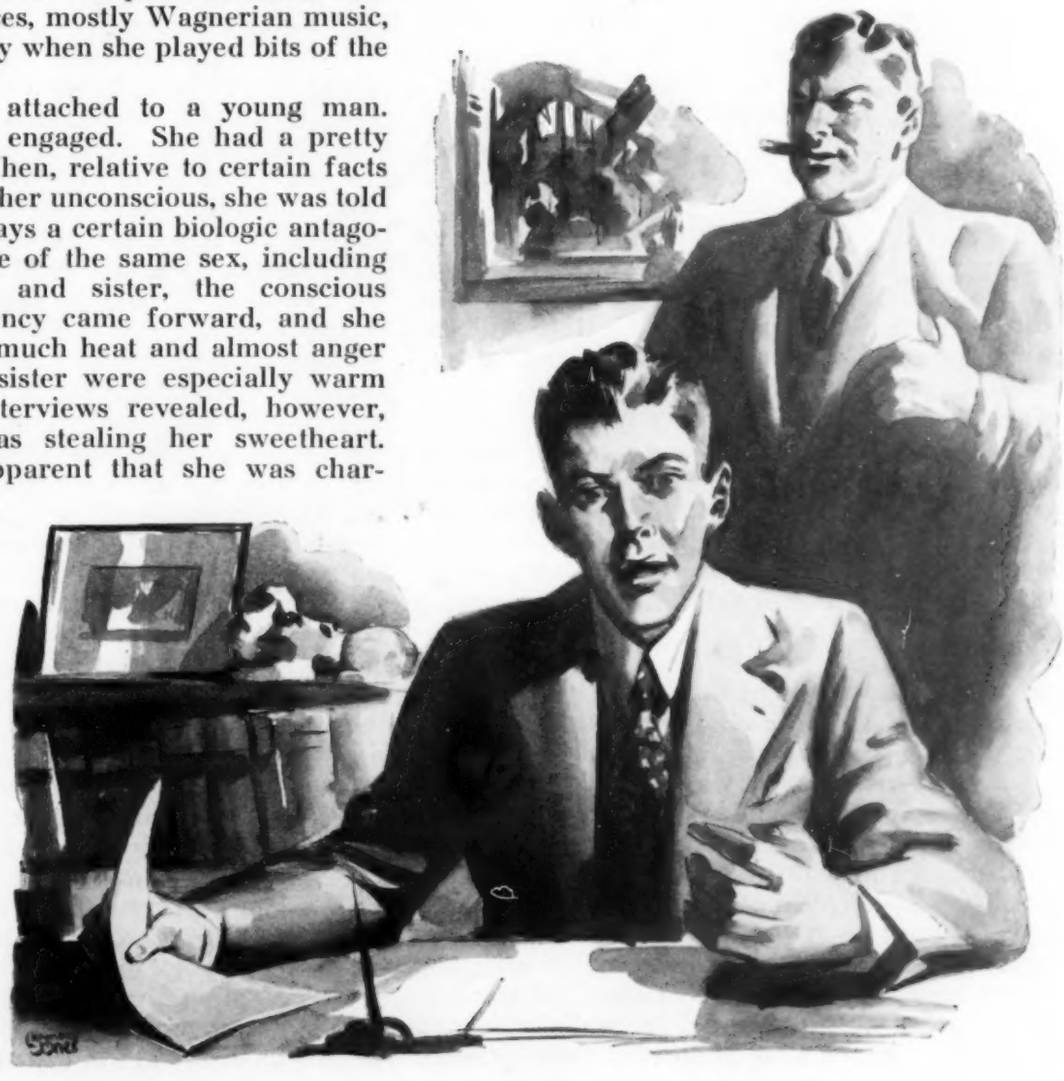
She had first noted the pain whenever she played certain pieces, mostly Wagnerian music, and more especially when she played bits of the opera "Siegfried."

She was much attached to a young man. They were almost engaged. She had a pretty younger sister. When, relative to certain facts which appeared in her unconscious, she was told that there was always a certain biologic antagonism between those of the same sex, including even the mother and sister, the conscious rationalizing tendency came forward, and she expostulated with much heat and almost anger that she and her sister were especially warm chums. A few interviews revealed, however, that the sister was stealing her sweetheart. Further it was apparent that she was characterizing the situation as a stab in the back, delivered to herself, as Siegfried met his death, it may be recalled. She had always given up to the sister, and here she was herself again carrying on the same pattern of submission.

She came to believe her own unconscious and permitted the whole show to come to conscious valuation. Thereupon she put her sister where she belonged, "got her man" and was relieved of her pain and her twisted spine. Here the mental attitude of Gentle Julia, of Isa Glenn's incomparable study by this name, gave her a "pain in the back," much as other people slangily express it in more conscious terms, when they say some one gives them a "pain in the neck."

There are innumerable "pains" in the neck, back and all over the body which mental attitudes of submission, technically known as masochistic, bring about. Nietzsche's discussion on the genealogy of morals throws much intuitive insight on this generalized situation.

In another brief chronicle of a related nature the retreat into an illness utilized another organ of the body. A young Austrian girl, about 19, had incorrigible vomiting. In spite of diets and medication she could not retain any food.



HIS CRAVINGS TO BE FREE FROM HIS OVERBEARING BROTHER-IN-LAW BROUGHT ACTUAL PHYSICAL DIFFICULTIES WITHIN HIS STOMACH.

In two hours, with one recurring dream, the main features of the story were obtained. The girl had no friends, had just come over from Europe to get work as a domestic. She had attracted the eyes of some vice racketeers and although she was not consciously aware of what was going on about her, the unconscious was alert to the dangers of her situation. She took refuge in an illness by a process of rejection, the vomiting, and thus was able to get into the free wards of the hospital where she was safe, at least for a time.

The proper social worker authorities were informed of the situation, and they promised her protection and a refuge. The vomiting discontinued in twenty-four hours.

These two cases illustrate the mental or psychogenic cause of bodily disturbance, but it is to the more chronic unperceived mental attitudes that I call particular attention.

A man in the early fifties, almost a cripple, had experienced advancing disability for three or four years. The patient referred to his condition as rheumatism, but x-ray examinations indicated that the process was not an infectious arthritis. The cause was to be sought outside the teeth, tonsils or other foci of infection. His mother and sister both had some arthritis, and there was the possibility of some constitutional element. The patient had been married, divorced and remarried; and now, a widower, he was living with his two daughters, the elder of whom was married and seeking a divorce and the custody of an only daughter. Here was a most annoying situation. He hated the son-in-law bitterly. Every conceivable legal trick and hindrance was put up by the son-in-law and his protecting sisters, one of whom was well to do. The case dragged on, and the patient, struggling with a small income, was being drained to the bone. As he described the whole affair his bodily contortions of leg, thigh, arms and fingers were those of one who wanted to kick, beat and strangle his opponents who were getting the better of him and his dearest wishes. His exasperation, hostility and frustration extended themselves into his tendons and joints and in brief had brought him to his present condition.

He had always been one who thought he could do the impossible. He was a frustrated inventor. He was not, however, lacking in psychologic insight and, when the situation was made clear for him, he began to mend his ways and to make considerable improvement.

Faulty mental attitudes, chiefly clustering about hostile-hatred impulses, less obvious and less conscious than those just narrated, slowly build up within the body irreversible changes known as chronic disease. These are usually thought of as episodic or subacute disturbances in various organs and are often called organ neuroses. They go on in the young adult with increasing severity, until about the age of 40, when they become chronic. They may involve almost every organ of the body.

Another instance of the physical results of faulty mental attitudes appeared in the case of a tall, thin man in the late twenties or early thirties. He was a dry goods merchant in a small southern town, was married, had one daughter, was on an annual New York visit in the interest of his store, of which he was general manager for his wife's brother who had other stores in the south.

He was reading Arnold Bennett's "How to Live on 24 Hours a Day," and our talk first centered about this ingenious and provocative book. I remarked that he evidently was not satisfied with twenty-four hours a day and ventured a conjecture that his stomach and intestinal difficulties, brief sketches of which he had given, might be related in some way to this grasping, greedy mental attitude toward many things in life. The cool, calculating methodical plodding way of Arnold Bennett was not of his type.

It would be impossible to condense the full history of his dissatisfactions at home, his cravings to be free from the overlord brother-in-law, identified with the wife, his reaching for preeminence in his community and a host of other phenomena. The constant urgings for possession, the drive toward grasping—social, intellectual and economic—all showed the persistence of a highly exaggerated infantile breast feeding formula, which might be condensed into the phrase "He never got enough or fast enough." The energy of this drive was at work all through his life and it borrowed energy from other drives, chiefly those of hostility.

The result was a long, outstanding series of stomach pains, relieved by frequent eating, and finally the development of stomach and duodenal ulcers as he reached the late thirties.

It is apparent that certain fixed mental attitudes are capable of bringing about distorted patterns of action in the organs of the body. Different organs may be chosen by reason of early environmental patterns, chiefly parental. They carry on through the thirties as organ neuroses, and by the age of about 40 have so fortified themselves as to bring about so-called chronic organic disease of major or minor significance. These, apart from accidental exogenous factors, make up from 75 to 80 per cent of all the practice of medicine, either in the period of formative organ neurosis or in the fixed irreversible and chronic period.

How can such mental attitudes be changed? They must first be recognized for what they truly are and not what we rationalize them to be. The rationalizations extend into our opinions about everything in life. In the study of the unconscious alone can the truth be found.

And the Deaf Shall Speak

By

ELIZABETH SCOTT

THE CHILD CAN LEARN TO LIP-READ SO WELL THAT ONLY A FEW OF HIS PLAYMATES WILL NOTICE HIS HEARING DEFECT.

YOUR DREAD has become a certainty. Your child is deaf—not a friend's child for whom you need feel no responsibility but your own for whom you have builded the dreams now crumpled before you.

Do you realize that you can build them again, more far-flung than before? The choice of a life occupation need not be greatly restricted. Naturally, you will not expect your child to become a grand opera singer. Yet he can learn to chant for his own pleasure and to play musical instruments if he desires.

If he is too young to realize his loss he will not understand why he should be different from other people. If he loses his hearing after he is old enough to remember the freer contact he formerly enjoyed, your attitude will help him determine to regain communication in order not to be left out of things. At any rate, it does no good for you to sit back bemoaning the misfortune fallen on your home. Whatever the age of the child, never, as you value the success of your reconstruction efforts, let him know that you are sorry for him and for yourself. If he is under 6 he will not long remember his loss, so why should you keep it before him? Let him share the duties in the household as soon as he can. You'll be astonished at what he can do.

However much you may wish it, you won't be able to keep him at home always under your protection. The earlier you find a school for

him, the better off he will be. While you are studying the merits of the various institutions, consider carefully their methods of instruction. The state financed schools usually have a lower tuition, but unfortunately many of them still use the dual system, teaching both lip-reading and the finger language. Because the latter is easier the children learn it first and consider lip-reading something to play with and not to be taken seriously.

Once a young child learns the sign language he can seldom be persuaded to discard it in favor of lip-reading as long as he is permitted to continue his finger gymnastics. What is more serious, if he retains his speech, which is not likely, he loses his spontaneous utterance. Not one normal person in a hundred knows the sign language, but only one or two of that hundred has a speech defect which gives trouble to the experienced lip-reader.

Now, which do you wish for your child? If he is of average mental ability he can certainly learn to speak clearly and to lip-read well enough that all who come in contact need not mark him. As an aside, it is my personal opinion that a deaf person should never be allowed to teach speech or lip-reading to a class of beginners, whether children or adults. There is too much danger of a mistake. Where each error counts for so much beyond the immediate moment, it is criminal to set up the wrong habit. A teacher who cannot hear will frequently fail to catch a slight sound which might be turned to a great advantage. Give thought, then, to the choice of the school and the instructors.

If your child has completely lost his hearing before entering the first grade, he will be happier if he is placed in a special school for a few years. Most schools refuse to accept a baby under 2 years of age, but they do prefer to take a child at least a year before he would be eligible for the public schools. By the time he is ready for junior high school, and sometimes before, he can be sent to the general schools, where he will hold his own up through the college years.

If he becomes deaf in the upper grades of grammar school it is usually necessary to remove him for a year or two until he can gain a foundation of lip-reading. During this time he need not lose his general grade ranking. If you live in a large city the public schools may have classes for lip-reading which enable the children to continue with the normal group for their other studies. These classes are particularly valuable for those who have retained part of their hearing but need some assistance. The partially deaf child should be taught lip-reading as soon as possible. Don't put it off, for the longer the delay, the harder it is for every one concerned. It is easier for teacher and pupil if the pupil has some degree of hearing.

Of course, it will not suffice merely to provide formal schooling. The entire problem of adjustment will take more patience than you ever knew you possessed. When once your child does learn something and attempts to show you, please don't get excited as one father did. His 10 year old, just acquiring speech, came home and interrupted his parents with, "Look! Something is behind you," accompanied by the proper gesture. His startled father gave him scarcely time to add "April Fool" before giving him a spanking!

You cannot afford to subscribe to the popular fallacy that since your child is deaf he has no need of quiet. You yourself cannot work well in a noisy atmosphere. Why expect him to? Every part of him gradually acquires the power of a sensitive sounding board. Watch the child. He is acutely nervous when there is a prolonged sound of any kind. If he happens to be holding a paper he is likely to be uneasy during a conversation between two other persons.

Many parents have wondered how the completely deaf child is taught to use his voice. That is a process determined by his individuality. Whatever he indicates as his interest, that is made a part of his first lessons. Months may pass before a single coherent word is uttered. Then, miraculously, a door is opened with a rush. One 6 year old became enthusiastic over numbers, so the first words he learned to say were, "one, two, three," and so on up to ten. The older children in his dormitory had been taught to say their prayers, kneeling together at night, but no attention had been given him. One night the housemother noticed him kneeling, with his eyes tightly shut, solemnly counting aloud. So the next day he was taught a prayer, and from that his progress was a rapid adjustment of his vocabulary to daily occurrences.

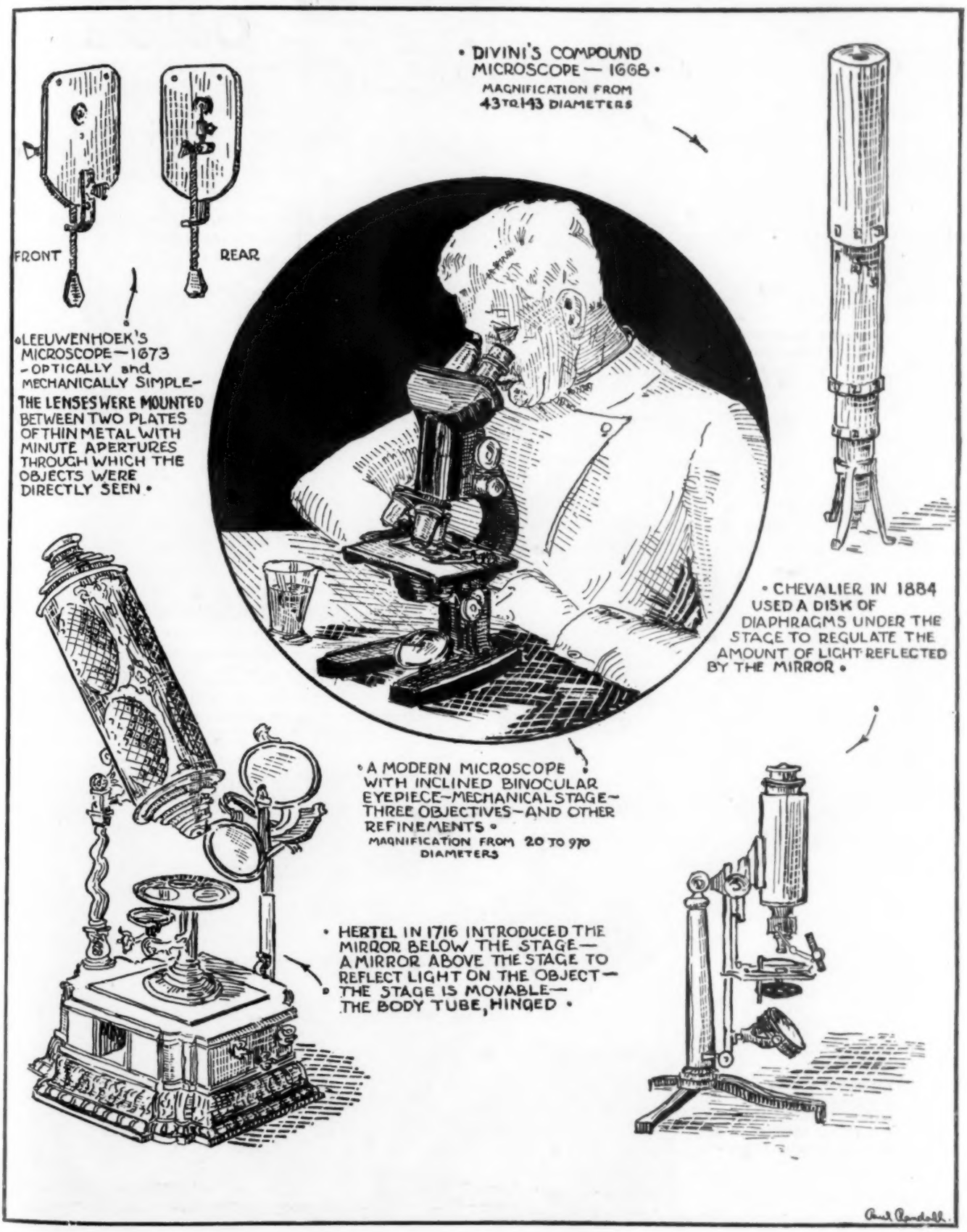
After a child has the rudiments of speech and lip-reading he will frequently repeat a dictated sentence, word for word, without the faintest idea of its meaning for a while, even though he has previously learned the words. Don't worry. He is simply occupied with the mechanics.

When your child comes back home to you, give him a chance. Try to understand him, play with him, read to him, even take him to lectures with you. Maybe he won't comprehend everything at first, but at least he will learn more about the world, retain his knowledge through practice and will not be so restless. You may be assured that you have successfully done your share. The rest is up to him; he will carry on his part. I know. I was one of those children.

Now, at the age of 22, I have already received a degree in Library Science from a state university. If all goes as scheduled, I shall soon receive a general bachelor of arts degree. I expect to get a job as a librarian and to fill it as any other university graduate would.

EVOLUTION of the MICROSCOPE

By ROBERT L. LEWIN and FRANK GLASSMAN


• DIVINI'S COMPOUND MICROSCOPE — 1668 •
MAGNIFICATION FROM 43 TO 143 DIAMETERS
FRONT
REAR
• LEEUWENHOEK'S MICROSCOPE — 1673 — OPTICALLY and MECHANICALLY SIMPLE — THE LENSES WERE MOUNTED BETWEEN TWO PLATES OF THIN METAL WITH MINUTE APERTURES THROUGH WHICH THE OBJECTS WERE DIRECTLY SEEN •
• CHEVALIER IN 1884 USED A DISK OF DIAPHRAGMS UNDER THE STAGE TO REGULATE THE AMOUNT OF LIGHT REFLECTED BY THE MIRROR •
• A MODERN MICROSCOPE WITH INCLINED BINOCULAR EYEPIECE — MECHANICAL STAGE — THREE OBJECTIVES — AND OTHER REFINEMENTS •
MAGNIFICATION FROM 20 TO 970 DIAMETERS
• HERTEL IN 1716 INTRODUCED THE MIRROR BELOW THE STAGE — A MIRROR ABOVE THE STAGE TO REFLECT LIGHT ON THE OBJECT — THE STAGE IS MOVABLE — THE BODY TUBE, HINGED •

Views and Oddities

Offizielles Verkehrsbureau, Zurich

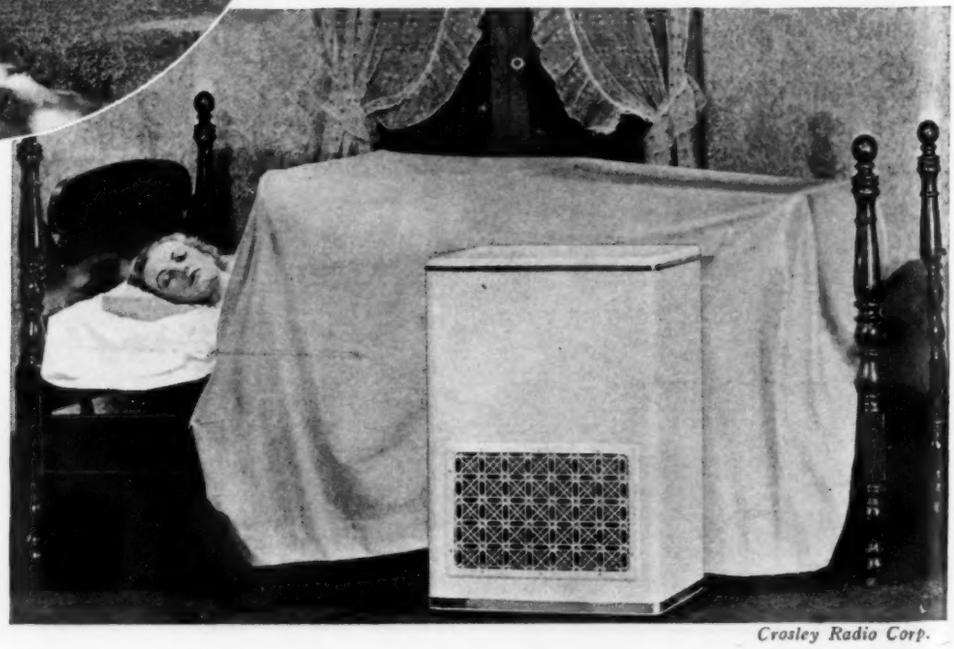
FOR THE ENTERTAINMENT OF SUMMER GUESTS HEAVY WAVES ARE PRODUCED EVERY TWENTY MINUTES IN THE DOLDER SWIMMING POOL IN SWITZERLAND.

Universal Newsreel from Soibelman Syndicate

THIS MARINE AMBULANCE, SHOWN BEING CHRISTENED, ADAPTS AERONAUTICS TO THE WATER. ITS "WINGS" PERMIT A RISE.

J. Feuerstein

THIS PICTURESQUE VIEW IS FOUND IN THE VICINITY OF DISENTIS, SWITZERLAND.



AIR-COOLING FOR NIGHT SLEEPING TAKES ITS PLACE BESIDE THE OTHER ODD BUT USEFUL INVENTIONS OF THE TWENTIETH CENTURY.

Crosley Radio Corp.

GERMS and Their ENEMIES

By Allen S. Johnson

GERMS, like the poor, are always with us and probably always will be. Even if it were possible to destroy all the germs in the world it would not be desirable to do so as many of them perform useful functions. The herbivorous animals could not digest the cellulose, which constitutes the bulk of their diet, without the bacteria in the intestinal tract. The bacteria that bring about the decay of dead animal tissue help to convert nitrogen into a form which plants can absorb from the soil. Bacteria are important in certain types of sewage disposal as well as in a myriad processes in the arts and sciences.

How may man protect himself against the germs that may prove harmful to him? Nature apparently intended a certain number of us to survive as our tissues were provided with defensive mechanisms against bacterial invasion long before germicides were known. It is important therefore that we select only such germicidal measures as will not interfere with our tissues' natural defenses.

When the relation of germs to infection was discovered more than half a century ago, all efforts were directed toward killing the germs even though the tissues of the patient were incidentally damaged. When Lord Lister operated he used a carbolic acid spray designed to kill any germs that might be introduced into the operative field. This antisepsis was a great improvement on the preceding era of surgical sepsis, but the carbolic acid (phenol) also injured the patient's tissues and unquestionably lessened their natural resistance to infection. The aseptic era which has followed relies largely on rendering germ-free the instruments and hands that are to touch the operative field. Mechanical cleansing of hands, gloves, instruments and operative field with soap and water is the first step. Instruments and gloves are rendered further aseptic by heat. Some germs may undoubtedly be introduced into the wound; but the tissues, uninjured by caustic germicides, are able to render these germs harmless.

The era of aseptic surgery has been with us for a generation, but the average layman still thinks in terms of the antiseptic days. A child skins his knees on the sidewalk. Only a casual effort, if any, is made to cleanse the abrasion of dirt. Some tincture of iodine or other antiseptic is splashed on, and the parent reflects proudly that he has given his child every protection of modern science. That infection so seldom results may be due more to nature than to the antiseptic; the dirt and other foreign material left in the wound may protect the germs from contact with the antiseptic. Had the dirt been removed with soap and water, most of the germs would also have been washed away. Soap in itself, apart from its cleansing properties, is a surprisingly effective agent. This is well illustrated by the experience of an accident ward in a well known metropolitan hospital where for several months all cuts and abrasions were merely cleansed with soap and sterile water. No other antiseptic was used even when suturing was required.

NEVERTHELESS, when the skin is broken it may be desirable to use some sort of antiseptic in order to weaken if not actually kill the germs that have escaped soap and water. The chances of infection are the resultant of the interplay of a number of factors: the number of the bacteria present, their virulence or vitality, and the resistance of the victim. General bodily resistance is a vague term, difficult to define and to influence. More is known about the factors influencing local tissue resistance. Dirt and foreign bodies, which mean anything that doesn't belong there, and dead and injured tissue lower tissue resistance to infection. Hence the importance of thorough but gentle cleansing with soap and water. In simple cuts and abrasions this may be sufficient. If there is bruised or devitalized tissue, which often results from crushing injuries, this must be removed as germs find it a fertile soil for growth. This principle of "debridement" is one of the great lessons of the war which has been applied to civil life. This is of course a procedure for the surgeon and need not concern the layman in his consideration of first aid, as such cases will obviously need expert care.

After the dirt and foreign bodies have been washed out and the wound is free from dead tissue, what germicide shall be used to discourage such bacteria as have escaped attention? Let us consider what we seek in an ideal antiseptic and then compare some of the available commercial products according to these criteria.

First of all, the germicide must be capable of killing the germs which are likely to be carried into a wound. There are various ways of determining this. A culture of a representative germ which has been grown in the laboratory may be mixed with varying strengths of the antiseptic. Thereby one may find the highest dilution of

BEFORE PAINTING ANY ANTISEPTIC ON THE WOUND A THOROUGH SOAP AND WATER CLEANSING SHOULD BE ADMINISTERED. MANY TIMES THIS SIMPLE PROCEDURE IS QUITE ENOUGH.

the antiseptic which kills the germs so that no more can be grown from this culture. Of course this will vary with the type of bacteria and the length of time they are exposed, but it affords a method of comparing different kinds of antiseptics. There is a great variety of chemicals which will kill germs in a test tube. We are interested in finding some substance which will kill germs in the body without injuring the delicate tissues that have been laid bare by the injury. For it has already been pointed out that damaged tissue favors the growth and concealment of germs. This at once narrows the choice, for certain chemicals are obviously unsuitable. Other possibilities have been explored by applying cultures of certain germs to the skin or in the tissues of animals and exposing them to various types of antiseptic. After a suitable period of time, cultures are taken to see whether the germs are still alive, and bits of the tissue may be examined to determine whether they have been injured by the germicide. Many of the germicides that are perfect in the test tube do not kill germs in the presence of blood or pus, and many others kill the tissue cells along with the germs. The substance in which the germicide is dissolved is also an important factor.

In all such laboratory tests, as well as in the application of their results to patients, it is important to distinguish between the bactericidal action of chemicals which actually kill germs and the bacteriostatic actions of those which merely prevent or retard their growth and activity. Cultures of germs exposed to some mild antiseptic which possesses only bacteriostatic action may give us a sense of false security because no growth is obtained; yet living organisms in a dormant state may be still present awaiting an opportunity to multiply with renewed virulence. Saturated solutions of boric acid or even table salt will

preserve meat and various other organic substances from decomposition by putrefactive bacteria, but they do not kill the germs in question.

SAFETY and effectiveness should be considered. It is difficult to find a germicide that is powerful enough to kill germs and yet so mild that it can be safely taken internally. There are chemicals, however, which are relatively nonpoisonous in small amounts but have such a repellent odor or taste that no more than a sip will be swallowed by a person in his right mind. This is important in a household where there are children and fools who take medicine without reading labels or turning on the light at night.

Finally, convenience must be considered. For the average household it is desirable to have something that can be painted on a cut or scratch without the bother of dissolving tablets or making up fresh solutions. Expense is likely to play little part in the selection as the amount used is trifling, and the really cheap germicides must be made up in solutions the greater part of which is promptly thrown away. So long as one remembers to wash out the dirt first, there is no objection to a convenient antiseptic that can be painted on. Tincture of iodine is a time honored preparation for this purpose. It seems to be a fairly effective germicide; and unless it has evaporated with age so that it has become strong and corrosive, it probably does not injure tissue to any serious extent. It is easy to procure and not likely to be inadvertently swallowed in dangerous quantities. It is best diluted with an equal volume of water just before using. A diluted form may be obtained at all drug stores. In recent years a number of complex organic compounds have been developed. Their great selling point has been that they are painless. This is true only of the watery solutions, and these are frequently less effective than alcohol or acetone preparations. When these newer germicides are used in such mediums they may approximate tincture of iodine in germicidal properties; and they generally sting as much.

THERE is a variety of compound cresol preparations which are satisfactory germicides if properly diluted. Being already incorporated in a soapy medium they possess detergent properties of their own, so that the injured area may also be cleansed with the solution, thus combining the cleansing and germ killing operations in one procedure. They have two drawbacks. It is inconvenient to have to prepare a pint of solution to secure the proper strength to disinfect a trifling cut. They may cause gangrene of the skin if applied as wet dressings.

Mercuric chloride (bichloride of mercury, or corrosive sublimate) is mentioned only to be condemned. It is a dangerous poison to have around the house as it may be taken by mistake. It is not a reliable germicide especially in the presence of blood or serum.

A number of chlorine containing chemicals possess antiseptic properties, but most of them are not suitable as general germicides either because they are irritating or because they do not retain their antiseptic properties long in solution. If used properly they are, however, valuable products. Various oxidizing agents such as hydrogen peroxide and potassium permanganate are feebly antiseptic but cannot be trusted to kill pus-forming germs with a short contact.

As previously stated, even trifling cuts and abrasions should first be thoroughly cleansed with soap and water. Without this no antiseptic can be relied on. With this preliminary treatment the need for an antiseptic is greatly diminished, but any of the alcoholic preparations mentioned may be employed to give an extra margin of safety. The final step is the application of a dressing which will favor the development of the clean dry crust with which nature attempts to protect damaged tissue. If the oozing of blood or serum is insignificant the area may be left exposed to the air. If a dressing is needed for protection against clothing or to absorb oozing it should be clean and dry. Such dressings, complete with adhesive tape, are now available in sterile packages. Do not apply a grease or an ointment with the idea of securing a sustained antiseptic action. Such a procedure results merely in a boggy macerated mess of tissue which favors the growth of bacteria and is slow to heal.

THERE are two exceptions to these simple first aid precepts. Puncture wounds should always be attended by a doctor as there is a definite danger of tetanus (lockjaw), and prophylactic serum may be required. Bites by animals should be cauterized with nitric acid as no other germicide is effective against the virus of rabies (hydrophobia). This cauterization, though simple and not particularly painful, demands the services of a physician.

The combined yodeling of the Tyrolese is probably far exceeded by the gargling of the American public once cold weather sets in. Because the nose and throat are the portals of entry of most infections of the respiratory tract and probably a number of other diseases, it has been assumed that the conscientious use of local antiseptics will kill these germs and prevent infection. There are two fallacies here. The routine prophylactic use of gargles and mouth washes can do little more than temporarily wash away the layer of mucus with which nature is attempting to protect these delicate mucous membranes. Such germ killing effect as these gargles may possess is transient, as they are in contact with only a small area of the respiratory tract for a short time. Reinfection

is bound to occur quickly. Attempts to dislodge infection already present by means of gargles are likewise futile as the germs causing the most trouble have "dug themselves in" below the surface by the time the patient experiences symptoms. Here, just as in the case of other tissues exposed to infection, one must rely on enhancing natural defensive mechanisms.

A PATIENT with an infected finger is instructed to soak it in hot water to assist nature in increasing the local blood supply. Heat in the form of hot throat irrigations helps a sore throat in the same way. The color, taste, odor and antiseptic properties of the irrigant are immaterial. Hot salt water in about 1 per cent strength is cheap and easily available. In individual cases the throat specialist may apply certain substances directly to the mucous membranes in order to stimulate local tissue resistance. This is not a home procedure for the layman to carry out at his own discretion. Particularly deplorable is the popular tendency to flood all accessible mucous membranes with silver preparations of the argyrol type. As each year passes, more and more cases of "argyria" are reported as a result of the indiscriminate use of these substances by the layman.

The disinfection of living quarters has certain points in common with antisepsis in the body. Complete eradication of the parasite may destroy the host. The famous London fire disinfected the city quite thoroughly at the time of the great plague, but nowadays the insurance companies favor less heroic measures. Mechanical cleansing of the premises is again of prime importance. The use of chemicals is limited to areas such as cellars which will not be damaged by water. Here solutions of chlorinated lime may be used to scrub walls and floors. Elsewhere one must rely largely on fresh air and sunlight after gross dirt and dust have been removed. The ordinary fumigants are practically valueless. Their virtue in the era of nailed-down windows probably lay in the fact that after fumigation, fresh air had to be admitted before a room became habitable. The eradication of rats and insects is a more complex problem and may require the services of trained exterminators who can use gases too dangerous to be entrusted to a layman.

In this warfare against the germs of disease, too much emphasis cannot be laid on mechanical cleanliness, the simple removal of dirt by scrubbing with soap and water. Germs lead a "hand to mouth" existence; hence the importance of washing one's hands before eating. This simple ritual is probably worth all the "patent" germicides on the market as far as the avoidance of infection is concerned. Careful experimental work has shown that living skin, freed from dirt and grease, is actually capable of resisting cultures of common pus-forming bacteria that have been applied to its surface.

HEALTHGRAMS ✣ from Articles in This Issue

¶Inadequate drying of the feet or neglect to use some antiseptic powder on them and in the shoes leads to the rapid contraction of "athlete's foot" on exposure. *See page 728*

¶"Compatible eating" now has the spotlight and is the latest dietetic bugaboo which food cranks have devised to frighten the bewildered and gullible public. *See page 683*

¶At least 80 per cent of the cases of infantile paralysis occur in children under 10 years of age. *See page 680*

¶Even if it were possible to destroy all the germs in the world it would not be desirable to do so as many of them perform useful functions. *See page 717*

¶Anything that adds to or varies the diabetic diet is always more than welcome. Fruits out of season may now be enjoyed by the use of saccharin in canning them at home. *See page 690*

¶Modern industry expects and demands not only good work but safe work from employees. *See page 693*

¶Colds keep more people from working than the more serious diseases, for it is this ailment which weakens its victims so that worse disorders can attack them. *See page 731*

¶Mosquitoes belong to one of two major groups; namely, the exceedingly annoying variety that adds to the discomfort rather than contagion, and the more vicious type that constitutes a virtual tube of death and disease. *See page 705*

¶You cannot afford to subscribe to the popular fallacy that since your child is deaf he has no need of quiet. Every part of him gradually acquires the power of a sensitive sounding board. *See page 713*

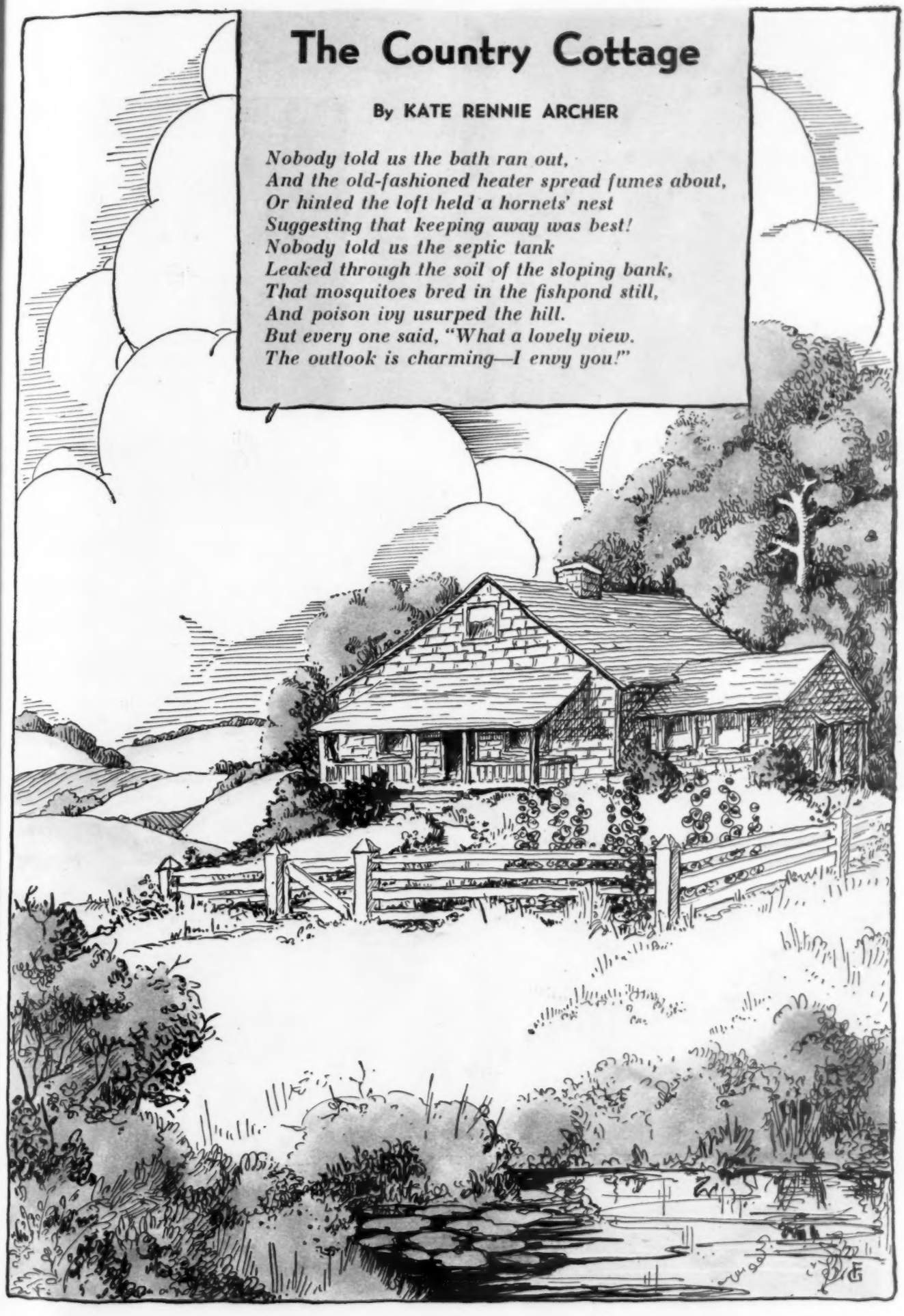
¶Exercise frequently stimulates relaxation; physical fatigue fosters sleep, while mental fatigue drives it away. *See page 740*

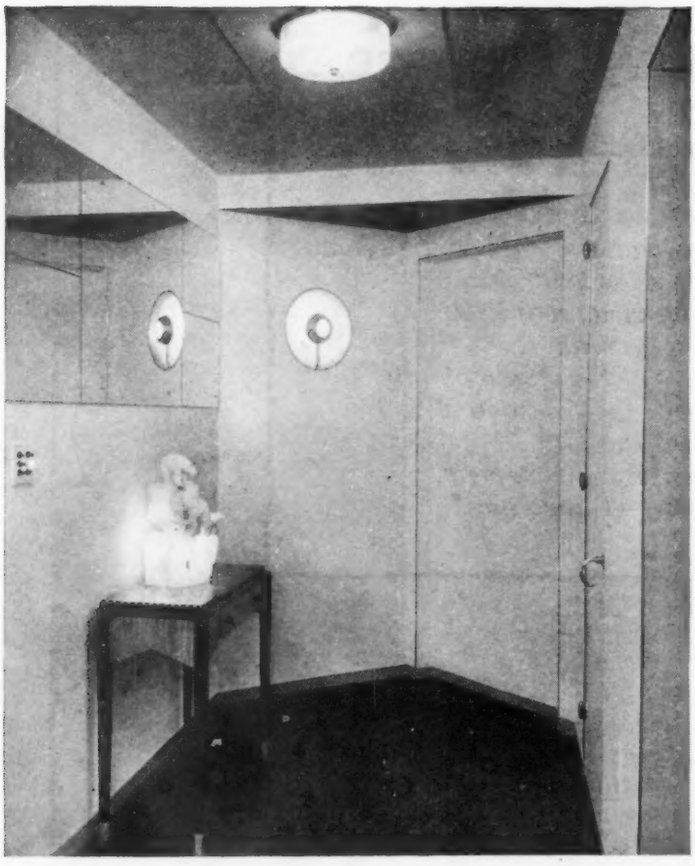
¶The whole truth about our life patterns and our cravings concerning them, our mental attitudes, is a strange mixture of our conscious and our unconscious with the odds, millions to one, on the unconscious. *See page 710*

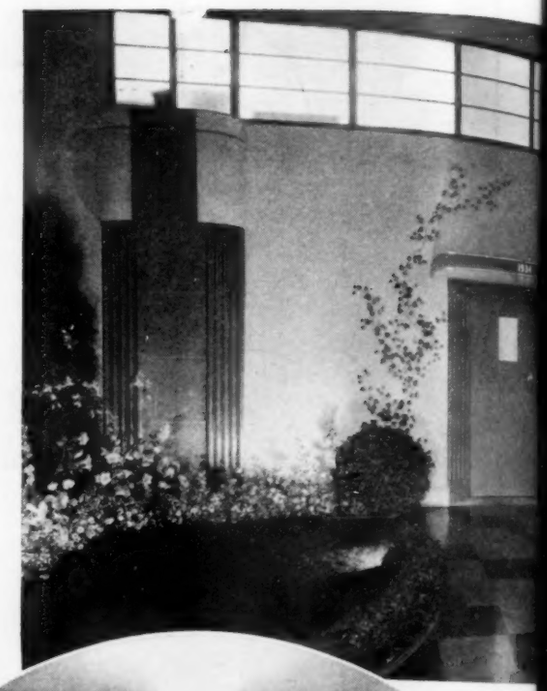
The Country Cottage

By KATE RENNIE ARCHER

Nobody told us the bath ran out,
And the old-fashioned heater spread fumes about,
Or hinted the loft held a hornets' nest
Suggesting that keeping away was best!
Nobody told us the septic tank
Leaked through the soil of the sloping bank,
That mosquitoes bred in the fishpond still,
And poison ivy usurped the hill.
But every one said, "What a lovely view.
The outlook is charming—I envy you!"







A GLOW! THESE VIEWS SHOW THE SOFT HOME LIGHTING EFFECTS ACHIEVED BY MODERN SCIENCE IN THE ILLUMINATION OF ROOMS. ELIMINATION OF EYESTRAIN IS PARAMOUNT.

"Home Sweet Home"

Was Never Before Like This

KITCHENS, COMPACTED ABOVE FOR THE APARTMENT DWELLER, AND ARRANGED BELOW AND IN THE CIRCLE AT THE FAR LEFT FOR A COMPLEMENT TO THE SUBURBAN HOME.

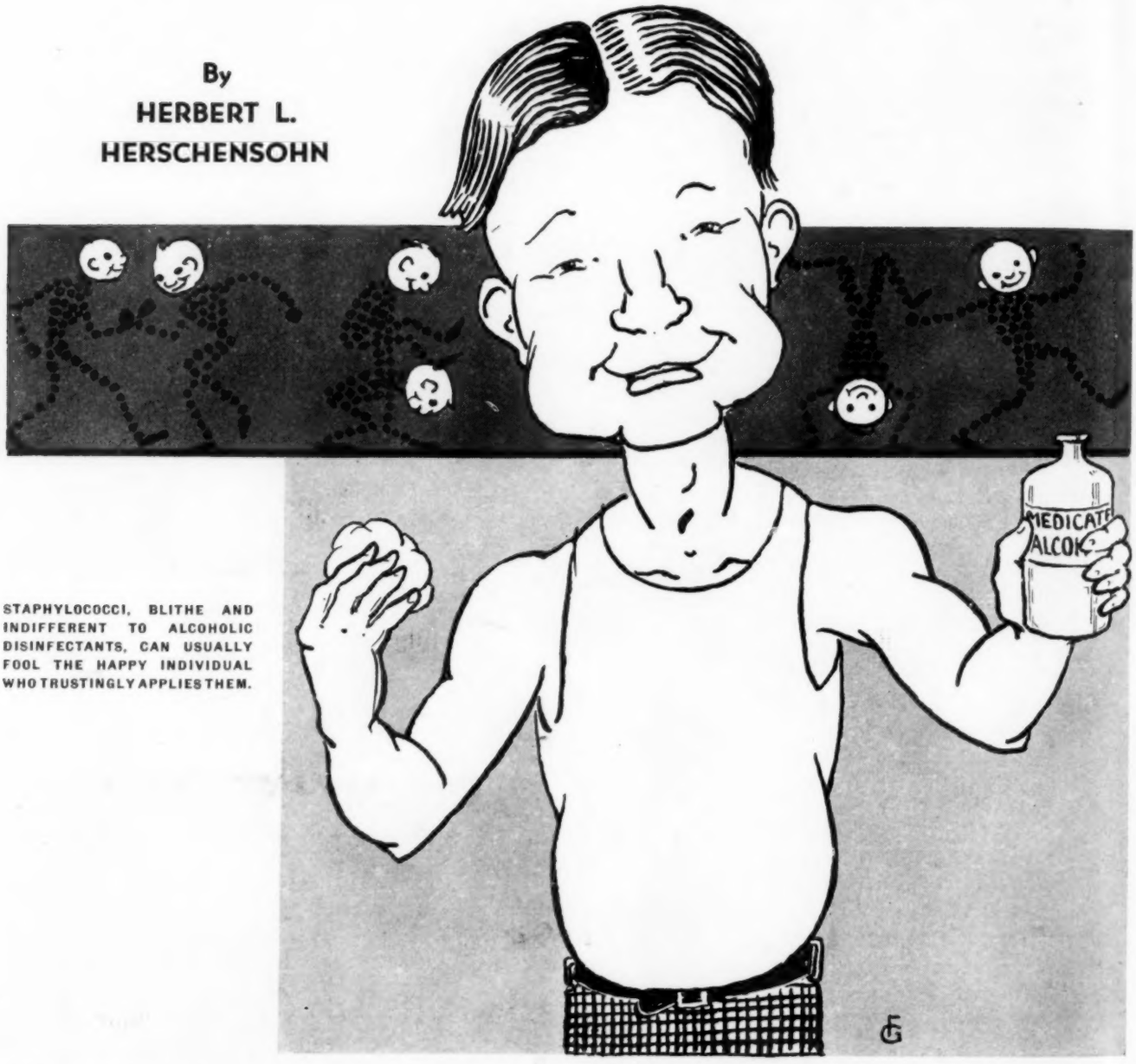
Modern Electrical Science Brings Comfort, Cleanliness and Convenience

Photos, courtesy of General Electric Company

THE STAPHYLOCOCCI

The Fifth in a Series on THE GERMS WE LIVE WITH

By
HERBERT L.
HERSCHENSOHN



STAPHYLOCOCCI, BLITHE AND INDIFFERENT TO ALCOHOLIC DISINFECTANTS, CAN USUALLY FOOL THE HAPPY INDIVIDUAL WHO TRUSTINGLY APPLIES THEM.

THE GREEKS have a most appropriate word for these germs. Found in bunches, they are called staphylococci because the root "staphyle" means "bunch of grapes" and "cocci" means "berries," each germ being round like a berry. However, those of us who are unfortunate enough to become victims of these germs find names for them which we think are perhaps more appropriate.

The staphylococci can withstand terrific punishment without succumbing. They can be placed in boiling water for longer than a minute and remain alive. When frozen by being placed in liquid air for a period of thirty minutes, about half the number of germs will be found to be very much alive. Most of the other varieties of germs, no matter how deadly they may be, die when exposed to the direct rays of the sun; but not the staphylococci. They seem to be resistant to everything, even drying. They can often be found alive floating about on the dust particles of the most immaculate living rooms.

STAPHYLOCOCCI have the annoying faculty of exciting the formation of pus. In fact, it was in pus that Pasteur discovered them in 1880.

They are the most common cause of boils and abscesses. The staphylococcus is also the most common cause of an infection of the bone which occurs particularly in children, the disease being known as osteomyelitis, or inflammation of the bone marrow.

It is only within the last fifty years or so that the formation of pus has been looked on as being an abnormal process. It was formerly thought that pus was to be expected in the healing of wounds. Pimples, boils and abscesses were supposed to be efforts by the body to rid itself of poisonous substances. Even today the notion persists in the minds of many persons that boils are "good for you" because the blood is thereby purified.

When it was found that pus formed only because of the presence of germs, frenzied efforts were made to prevent their growth and development in wounds. Antiseptics of every nature have been tried, and even today from time to time new preparations are announced which claim higher germicidal value than any substance previously used. Most claims, especially those blared to the public in huge posters, are fantastic and unfounded. Those antiseptics which depend on their alcoholic content are practically worthless in thwarting the staphylococci. Yet one often finds a person beaming with satisfaction because he has "disinfected" the skin with alcohol. Unknown to him, however, the staphylococci also beam with satisfaction, being entirely unharmed. In tincture of iodine, which is used in the preparation of the skin prior to operations, the iodine itself, and not the alcohol in which it is dissolved, makes the solution so effective.

Staphylococci are classified according to the color of the pigment which they produce when grown artificially. For example, one variety produces a yellowish-golden color and is called Staphylococcus aureus, derived from the Latin *aurum*, meaning gold. Another form produces a porcelain-white colony and is called Staphylococcus albus, *albus* being the Latin word for white.

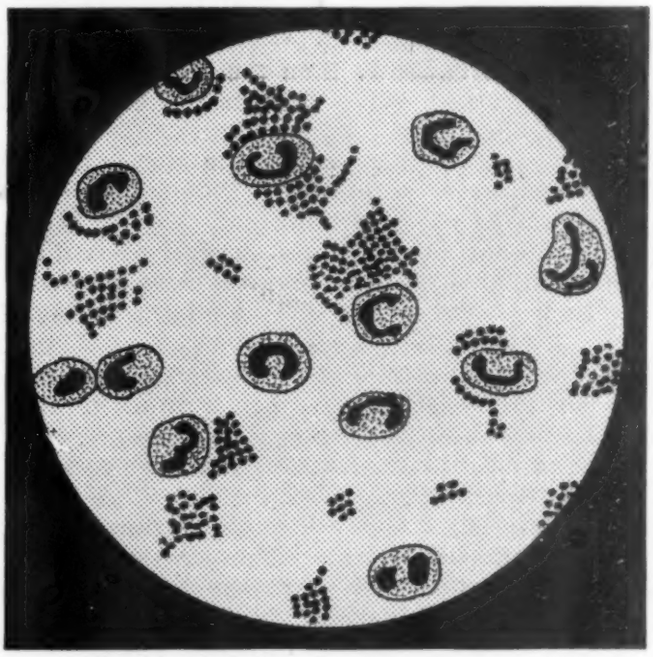
STAPHYLOCOCCUS aureus is one of the commonest germs capable of producing disease. It is found almost anywhere on the skin and mucous membranes. It cannot move, but its rapid reproductive growth exerts a far-reaching influence. Within twenty-four hours, hundreds of millions of staphylococci are formed from an original single germ.

This variety of staphylococcus is found in almost all pustular diseases of the skin and mucous membranes such as pimples, boils, carbuncles, impetigo, "barber's itch" and acute abscesses. The infection may spread to nearly any part of the body, favorite places being the joints, the kidneys and the heart. It is remarkable how many staphylococci can be safely harbored by the blood without causing fatal damage to the body.

People vary in their susceptibility to infection by the staphylococci. Naturally those who are in poor health are far more likely to be troubled by this kind of germ infection than are those who enjoy buoyant health. Especially in such constitutional diseases as diabetes the victims are often afflicted with pimples and boils. In healthy persons the staphylococci choose, for no apparent reason, the back of the neck and the buttocks for their attack. In general, the staphylococci will settle and multiply in those portions of the body which offer least resistance. Their invasion of wounded parts with the formation of pus is a fact which is only too well known. In children suffering from malnutrition the germs are frequently found in the bones.

SOMETIMES, however, the staphylococci do not remain in only one small part of the body but enter into the blood stream and are carried throughout the body. This condition most frequently follows the occurrence of boils and carbuncles, because these positions are usually the original foci from which the infection spreads. In a secondary way, it is at times associated with debilitating conditions such as chronic alcoholism, diabetes and kidney afflictions.

Since staphylococci are nearly always present on the skin of all healthy persons, infections do not necessarily depend on contamination of the germs from some other person. Nevertheless, the poisonous properties of various strains of staphylococci differ considerably. The most serious blood poisoning by these germs is often



THE STAPHYLOCOCCI ARE SHOWN ABOVE IN A TYPICAL CLUSTER. THE LARGE CELLS ARE WHITE BLOOD CORPUSCLES WHICH HAVE COME TO DEFEND THE BODY AGAINST THIS INVASION. THE VIEW IS OF ACTUAL WARFARE SEEN IN A DROP OF PUS.

acquired by direct contact or inoculation from some person already seriously ill with an infection due to the same strain of staphylococci.

When this type of blood poisoning takes place the blood picture undergoes a change. Not only does the number of red blood cells drop to almost one half the normal quantity, but each cell loses a considerable amount of its coloring material. On the other hand, the white blood cells, the "soldiers of the body," nearly double their normal number in their effort to frustrate the advance of the staphylococci.

In traveling through the blood the germs lodge in various portions of the body, setting up new points of infections. The material gathers in these areas until they become large abscesses. These may form in the lungs, causing a pneumonia which obscures the real cause of the condition; or they may occur in the brain, in which case one's attention is again diverted from the actual cause of the ailment. More commonly, however, these abscesses develop underneath the skin in various parts of the body, being thereby immediately recognized as secondary to the original boil or carbuncle.

A FAVORITE lodging place for the staphylococci is the lining of the heart and particularly on the valves. The infection which they set up impairs the efficiency of these valves and, accordingly, the force of the heart. Little plantlike growths, called vegetations, are formed as a result of the infection. The surface of these vegetations is rough and irregular, much resembling a warty or cauliflower outgrowth. Fragments may be broken off and carried to far parts of the body, where they again form new abscesses.

One or more of the valves of the heart may be seriously damaged by the staphylococci. The valves on the left side of the heart are affected much more frequently than those on the right. As the damaged valve eventually heals, scar tissue forms. This has a natural tendency to contract, just as the scar tissue does on the body's surface. Consequently, the opening controlled by the valve becomes narrowed, causing an obstruction of the blood stream; or it may so happen that the valve does not close properly and then leaks, so that the blood regurgitates back through the opening instead of being forced onward.

When the staphylococci, either in circulating through the body or by direct contamination following an injury, attack a bone they usually do so in the marrow. The reaction there is an intense congestion of blood in an effort to thwart the invasion of the germs. The pressure within the solid confines of the bone is sometimes so great that it literally forces considerable amounts of staphylococci out into the general circulation, too many for the white cells of the blood to combat successfully. The resulting "blood poisoning" may prove to be fatal. Even if the germs are not forced into the blood stream the general condition of the person is profoundly affected by the absorption of the poisons which form in the stricken bone.

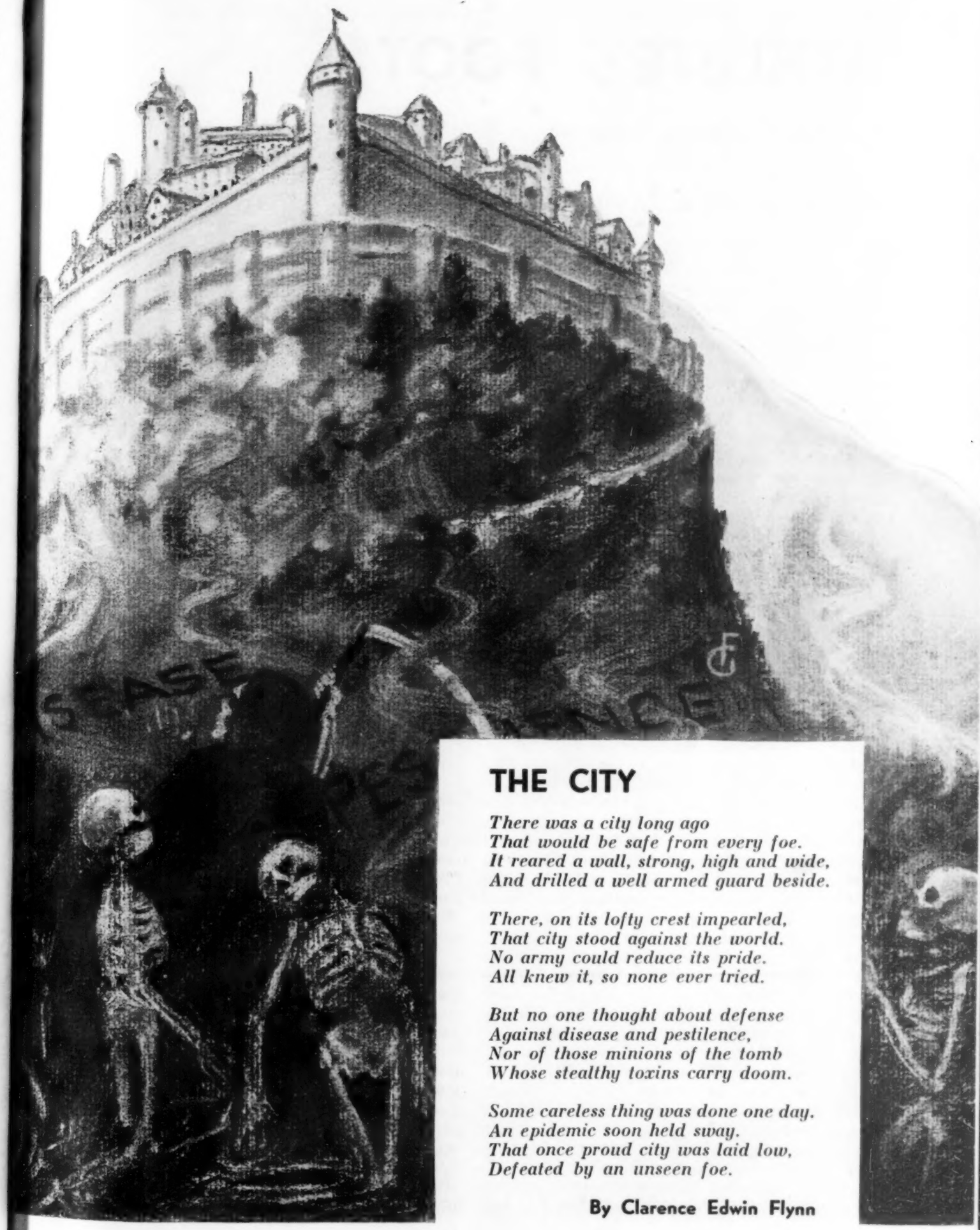
Around each bone there is a thin, membrane-like layer of cells called the periosteum. Pus, due to the presence of the germs, readily forms between this layer and the bone itself, stripping the membrane from the bone, occasionally involving the whole length and circumference of the shaft. The anatomy of the bones is such that, except in infants, it rarely happens that the infection can spread from one bone to another across a joint, unless the condition originally started in the joint as the result of a direct injury.

One might assume from the discussion of these germs that all staphylococci are harmful. This is not the case. Staphylococcus albus, the one which produces white colonies when a culture is taken, is far less noxious than Staphylococcus aureus. Some persons believe that these two types are identical, except that one has lost the ability to produce the golden pigment, at the same time losing much of its virulence. One variety of this germ is a constant inhabitant of the skin. It is almost entirely harmless, although when examined under the microscope one cannot distinguish the difference between it and the more virulent type. If it should accidently contaminate a wound it does not materially upset the healing process, although there are times when it causes the bothersome "stitch abscess" following operations.

ONE of the most gratifying accomplishments in the field of immunology recently is the development and successful use of a staphylococcus toxoid in staphylococcic infections. Persons who are afflicted with severe boils which recur in crops for several years are often decidedly benefited by injections of this toxoid. Some require only four or five injections, while others require as many as twenty before the desired results are obtained. This method of treatment is used also in acne, carbuncles and osteomyelitis. The results in acne conditions are not as pronounced as in the pure staphylococcic infections.

In sterilization of the skin it must be remembered that the average "antiseptic" is not an antiseptic, at least as far as the staphylococci are concerned. The use of tincture of iodine or mercurochrome is highly commendable. If any value at all is placed on life, it will be worth the effort to seek the advice of a physician before placing wholehearted confidence in some new fangled solution which smells "strong" and has a different color and a beautiful label. Soap and water will probably wash away more staphylococci than the antiseptic can destroy.

[NOTE.—In the September issue, Dr. Herschensohn will discuss the typhoid bacilli.]



THE CITY

There was a city long ago
That would be safe from every foe.
It reared a wall, strong, high and wide,
And drilled a well armed guard beside.

There, on its lofty crest impearled,
That city stood against the world.
No army could reduce its pride.
All knew it, so none ever tried.

But no one thought about defense
Against disease and pestilence,
Nor of those minions of the tomb
Whose stealthy toxins carry doom.

Some careless thing was done one day.
An epidemic soon held sway.
That once proud city was laid low,
Defeated by an unseen foe.

By Clarence Edwin Flynn

"ATHLETE'S FOOT"

The Constant Invader

By DAVID D. LEVINE

COMPARATIVELY little can be done to prevent the annoying but seldom dangerous disease known popularly as "athlete's foot." As in the case of the "common cold," its existence cannot be denied.

Athlete's foot is classified as a ringworm of the feet and is one of a great variety of skin eruptions ranging from the toes to the scalp. It has its antecedent in the famous dhobie itch of the Eastern Archipelago, the islands of the South Pacific, China and India. There, missionaries and doctors state, it was popularly believed that washermen contaminated the clothes, giving rise to the name "dhobie" (washerman's) itch.

"In many islands of the South Pacific it affects a large proportion of the inhabitants; in some islands quite one half. There is good reason to believe that its area of distribution is gradually extending," Sir Patrick Manson, an English doctor, writes in his book "Tropical Diseases."

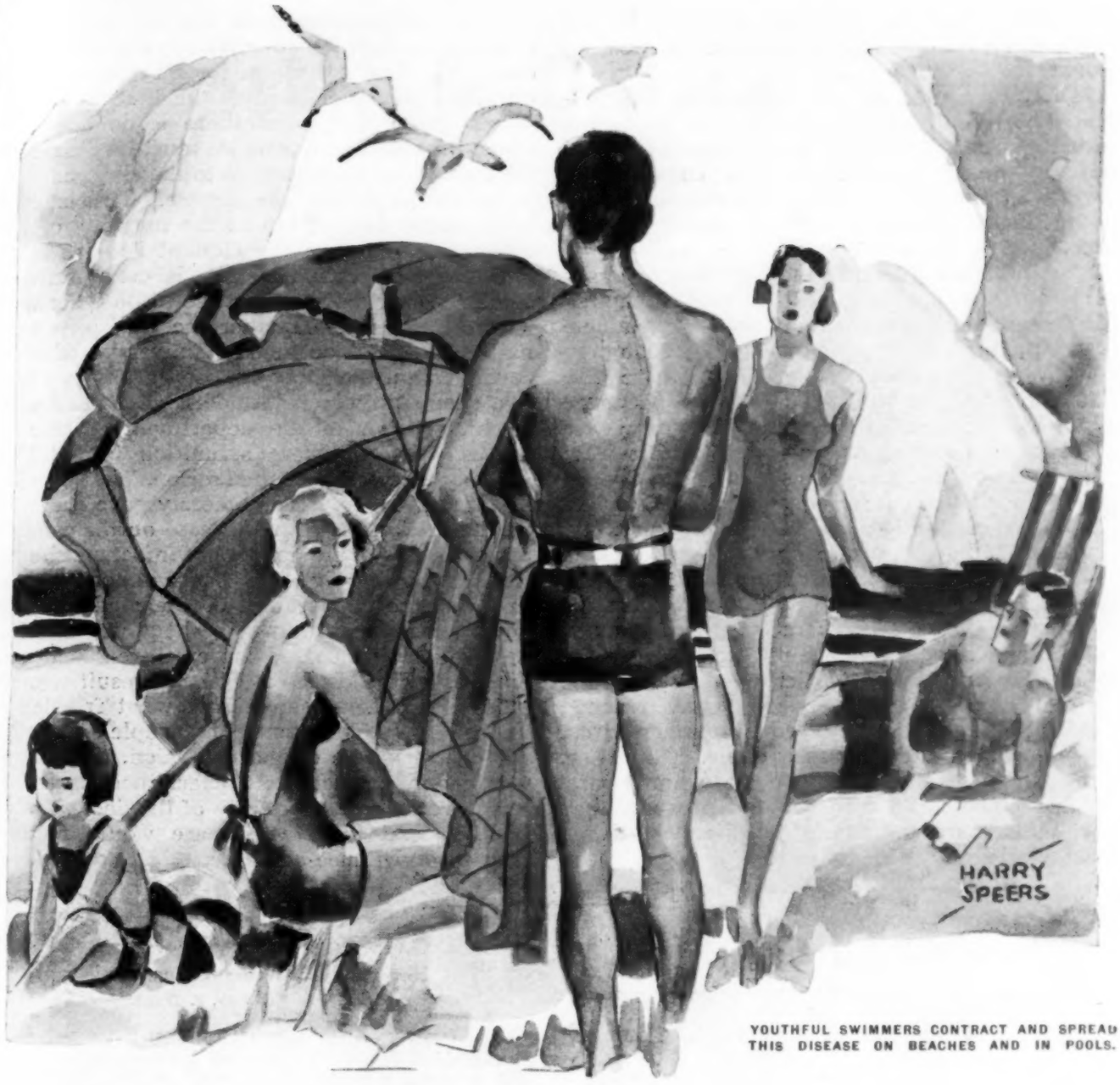
That this disease should have spread to more temperate climates such as our own is no phenomenon, since it always did exist here in varying degrees of intensity. That it should have become so widespread has become a matter of great speculation among skin specialists. The soldiers returning from the World War are often charged with bringing the infection to this country in its more virulent form. Perhaps this contention is unfounded, but the known fact that the fungus causing athlete's foot thrives in moisture and is allowed to develop freely when the feet are not carefully washed and dried following excessive perspiration gives this theory at least the semblance of fact.

The increased use of athletic facilities is the second major reason advanced for the spread of athlete's foot.

"Ringworm of the feet is a common condition, the incidence ranging from zero in young children to almost 100 per cent in college athletes," says Dr. Donald J. Wilson, captain of the Medical Reserve Corps in Omaha.

This striking revelation brings to light a strange fact. Healthy young men and women who are able to exert themselves in the strenuous exercises of sport competition are more subject to this infection than is the average individual. Excessive perspiration of the feet and improperly cleaned shower rooms, swimming pools, beaches and bathrooms are important factors. These concentration points of the fungus are the constant habitat of the athlete, whose bare feet expose him to greater dangers of contraction than the ordinary individual.

The third and final major reason given for the spread of the disease is the negative claim that no such increase in the number of affected persons exists, but that the superior skill of modern medicine is now in a position to discover more cases than ever before. Undoubtedly this is true to a great extent, but the theory takes on complete validity only when it is coupled with the apparently more numerous opportunities for persons to come into contact with the fungus, owing to the other causes named. All these reasons advanced are contributory to the increase in the number of cases of athlete's foot.



YOUTHFUL SWIMMERS CONTRACT AND SPREAD THIS DISEASE ON BEACHES AND IN POOLS.

Microscopic examination of scrapings taken from infected areas reveals a fungus that is either flat, segmented or branched. These fungi are able to exist indefinitely under unfavorable conditions such as dryness and cold, as they quickly form into minute spores capable of being carried or blown into damp, warm areas, where they again thrive. Thus, inadequate drying or neglect to use some antiseptic dusting powder on the feet and in the shoes leads to the contraction of the disease if the individual has come in contact with the germs.

Once contracted, the disease is easily recognizable in its most common forms: 1. Rough, cracked and often soggy skin will form between the toes, particularly the fourth and fifth toes. 2. Little water blisters, frequently extremely itchy and leaving a raw surface when they burst, may spring up around the toes. 3. There may occur the less common thickening and piling up of skin to form callosities on the soles of the feet. Should the disease become established, it may go on to produce an eczema-like reaction on the feet or even on distant parts of the body, such as the hands, groin, armpits and nails.

Care in foot hygiene is indispensable for both the prevention and the cure of athlete's foot. The ordinary precaution of washing the feet in warm water, drying them carefully and using an antiseptic powder goes far to eliminate the possibility of contraction of the disease. The feet should be bathed at least once each day in the case of individuals already suffering from the disease. Hosiery should be changed at least twice daily, with an equal number of changes in pairs of shoes worn. The use of ointments and lotions containing salicylic acid aids in the battle against the disease. The acid does not kill the organism but causes the flaking off of

the skin, so that the antiseptic agents combined with it can get down to the level of the growing fungus.

The prevalence of this disease in the universities of our country has led to numerous investigations and attempts to curtail its spread among young people. Let us consider an average university in which the student health department maintains a close watch on the existence of this infection.

Among 3,616 students entering the University of Wisconsin during the fall of 1935, including freshmen, upperclassmen and entering graduate students, almost 500 cases of athlete's foot were discovered in a form acute enough to require close medical attention. This means that more than 13.5 per cent of the students entering this average university not only are sufferers from the infection but are carriers as well. Should they be permitted to engage in the normal activities of student life before measures for cure are taken, it would obviously result in a disastrous and unnecessary increase in the number of individuals affected. With the aid of the department of athletics for men and women, all students suffering from the disease are removed from active participation in athletics. If their cases are severe enough or have reached the chronic stages they are put under direct supervision of the university clinic. Otherwise, directions are supplied them as to home care, with frequent check-ups on the progress they are making in eliminating the disease until the last vestiges have disappeared.

These precautions alone are not nearly far-reaching enough for effective control of the disease. Physical education for most students in our universities ends after the first or second year. From that point there is no adequate check provided, and reliance must be placed on the individual student to go to the clinic as soon as he thinks he has the disease. This method is obviously faulty; but in the majority of the universities because the student body is large and the staff of physicians is comparatively small it is virtually impossible to do otherwise.

In an attempt to further the work of eliminating athlete's foot on the University of Wisconsin campus, a short but comparatively effective campaign was instituted by Dr. Charles E. Lyght, director of the department of student health. Articles were submitted to the two afternoon newspapers in Madison, Wis., the seat of the university. These merely gave statistics on the prevalence of the disease on the campus and pointed out the dangers of infection, should it reach the chronic stage. More important than this was the cooperation of the student daily newspaper in printing a lengthy, detailed description of causes, symptoms, treatment and dangers of the disease. The net result was an inflow into the clinic of somewhat frightened but also infinitely wiser young people. Although the exact success of the campaign, short as it was, cannot be accurately determined, nevertheless it was felt that the fears of the doctors were justified and that the disease would require increased vigilance and care.

Forecast for September

Nature's Indian Summer—the last of outdoor vacations—preparation for the return to school—all these reflect the changing of the old hot summer garb into something new for Autumn.

Likewise, in the September issue, *Hygeia* presents her articles in a manner which dovetails in with the season's change of interest.

Did you know that college students, both men and women, are actually far superior physically than their noncollege friends? Accurate statistics are found to support this discovery and are presented in September's article, "The Physical Superiority of College Students," by *Harold S. Diehl*. He also has discovered that generally speaking students in the large private institutions are superior physically to those in state universities, while the latter are better physical specimens on the average than those in small sectional colleges.

"At Home to Safety" continues the series of safety articles by *Eleanor Everet*. She writes convincingly that the home is just as dangerous as the road or the factory.

"Modern young people are generally conceived of as a race of self sufficient and impertinent egotists," says *Lee Vincent* in his article, "Youth Needs to Believe in Itself," next month. Beginning thus, he proceeds to explain, as the title suggests, that there is an extremely important reason for this seemingly unmerited attitude. They need assurance, he believes, and their behavior is merely an outward manifestation of their mental shortcomings.

***Dr. Hilton Rice* recounts his experiences with the gradual extermination of many once-feared mortal diseases. Pernicious anemia, diphtheria, malaria, smallpox and yellow fever are all now well under control. These diseases which he was trained to treat have practically disappeared from under his eyes.**

Among the other articles scheduled for September are *Dr. J. F. Rogers'* "Home Study" in which he discusses this pertinent topic; *Dr. Lee D. Cady* tells of "Snakes in the Service of Science"; "The Play Way to Health and Long Life" is pointed out by *Calvin T. Ryan;* and that universal trouble, heart disease, is weighed by *Dr. Edwin A. Cameron* in his article, "Shall I Escape It?"

O, softly on yon banks of haze,
Her rosy face the summer lays!

—J. T. Trowbridge

The Bookworm Gets a Cold—and a Lesson

By PHILIP JARED

I KNOW it is rather cruel to be amused by the misfortunes of others, but as the saying goes, "We learn by our mistakes." The error Junior (Old Sock) Answith made caused them all to poke fun at him and say he was no longer the 17 year old Socrates, the wise man, but just another bookworm with a stomachache.

His sister Judith, The Dumb Cluck, still remembered the fright Old Sock caused her by his wrong diagnosis when she had chilblains, but she dared not mention the incident because she feared Old Sock or Old Teaser would call her Monkey-Heels. That would not be very nice for a young woman of 14 with movie star aspirations. Why, it would laugh her right out of pictures before she even got there!

Old Teaser, of 9 sage years, had no such brakes on his tongue and so had a great time teasing or wheedling Old Sock—until he got chased away. Old Sock could do this because he really was not so ill after the first day, but his father had ruled that he must rest in bed until it was all right for him to be up and around again.

Old Teaser heard Dr. Answith say that there was nothing wrong with Old Sock but an acute coryza, and he had been prompt to ask what "a cute cor-eye-zuh" was. After he learned it was just an ordinary common cold like he sniffled with sometimes, he rushed up to Old Sock and chanted: "Old Sock must get his tonsuls out, yah, yah!"

"Nod don*suls*, id's don*sils*, you hyena!" said Old Sock as well as he could with a stopped up nose. "Sdob 'ad noise, you Comanche, an' ged oud."

He crawled dizzily out of bed in pursuit, but Old Teaser took refuge in the jungles downstairs, happy to know he could get Old Sock's dander up, and he would not be chased far. Old Teaser found Judith reading in the living room. He was now a yipping Comanche on the warpath hunting "scallops." No future movie star will permit any howling 9 year old Comanche to muss up her coiffure, so Old Teaser was soon in full flight to safety in his inaccessible "cliff dwelling" in the basement. There he quickly changed the identity of his tribe and howled defiance to all enemies of the long dead cliff dwellers. After a minute or two he realized that being a forgotten Indian was not much fun. Like a frisky pup playing "big dog" he bounded in where I was tinkering with Mrs. Answith's car to announce Old Sock's predicament.

Old Teaser's notion started a disagreeable trend of thought in Old Sock's mind. He knew no doctor would think of taking his tonsils out then, simply because it was not done that way. This cold nuisance was a problem. For a young man of 17 who was to be a Pasteur, a Lord Lister, a Billroth or some one who could play nip and tuck with his own dad, this problem of colds and tonsillitis should be a mere bagatelle—duck soup, as he termed it. He arose from his sickbed and drew on his Hippocratic toga—his bathrobe—and went "slup-slupping" down the stairs in his slippers. In his own mind, Hippocrates might have had 2,000 years the advantage of him and be the Father of Medicine, but old Hippocrates had neglected to settle this nagging question of measly old common colds. He, Junior Answith, was now aroused to make inquiry into the matter and do something.

Under a load of books, Old Sock staggered weakly back to his sickbed. He blew his nose defiantly and shook off his toga. By the time he had his aching body arranged and ready to read he had to know what his fever was. It was almost 103. Then he opened a book to begin reading up on the common cold.

He was thirsty and drank copiously. For some reason he could not read comfortably, and his scientific brain would not concentrate on closely printed gems of medical wisdom. His mind was made up though, and he told himself it would require a very uncommon sort of cold to slow him up in his scientific conquest. However, he was soon asleep with his mouth open, snoring chokedly through his raw throat. The quest had conquered him. As he slept fitfully through the night he had nightmares in which he battled cold germs variously shaped on the order of a boa constrictor blended with an octopus.

THE next morning, Old Sock had little taste either for breakfast or for science. He hoped he would not have any complications. His fever was lower, and most of the aches were gone. Wild West stories were far more entertaining than the "literature" on colds. By afternoon his sluggish mind was working better and his stuffy

"SO YOU FEEL LIKE YOU'RE POISONED, DO YOU?" THE DOCTOR ASKED HIS AILING SON, THE OLD SOCK.

nose was somewhat cleared. He spent some hours alternately dozing and picturing how he would direct his massive brain to the solution of this problem, and how he would then be hailed by word of mouth, by newspapers and by historians as the man who had given the human race its greatest release from distress and misery.

Once he had heard his father remark that the person who could discover the real cause and a remedy for the common cold should be given more credit than if he were to do the same thing for cancer. That, he remembered, had struck him as curious, but his father had explained how colds were so universal and how people neglected themselves so that they got pneumonia, sinusitis, bad ear conditions, rheumatism, and even kidney and heart diseases. In other words, colds kept more people from working than the more serious diseases, and it was this ailment which weakened its victims so that worse disorders could become manifest or

could attack them. It was not so much the actual seriousness of the cold itself but rather the time lost from work and these other complications which were really important from the health point of view.

Old Sock reasoned that since he had not been worth a dime a day for two days and probably would not be worth more than fifteen cents for two more, his father was undoubtedly right. Not that he was working for wages, but somebody had figured it out how the average day in high school was worth fifteen or twenty dollars to the student in his later life. Old Sock concluded he was paying a high price for going to that party where one of The Dumb Cluck's friends had tried her best not to cough and sneeze in other people's faces. Women, thought Old Sock bitterly, were always getting a fellow into some sort of mess.

Old Sock felt so much better and so self righteous after this momentous observation that he decided to sit up a while in the living room. He turned idly to the end of an article on the common cold which he was reading. The author's summary told him the cause for the common cold was not proved as yet. Some thought it was an ultramicroscopic virus which could pass through the closest filters, and others had concluded that colds were caused by a number of different germs which are more or less permanent residents in noses and throats. This medical author, not to be outdone by such a germ tangle, further advised Old Sock that after all the best cure was the prevention.

THAT seemed reasonable to Old Sock, so he read on to learn how fresh air, exercise, balanced diets and rest were invaluable in cutting down the number of colds he might expect to have. If he were to do all this and then avoid chilling or fatigue, he would further reduce the number. Finally, he should avoid all people with colds, especially those who were in the same room. A cough, he learned, could and did spray germs for a distance of 12 feet.

After reading this, Old Sock realized it was a good thing he was not scary about germs, or he would be having all sorts of fits about them. Rather than wear a mask all the time to filter out every predatory little cold germ, it was better to take his chances with an occasional cold. He could not remain in fresh air all the time and be in rooms with other people too. He could not be exercising all the time just to prevent a few days of indisposition. He would eat the balanced diet his mother had prepared for him, but he would rather have a cold than worry about all the vitamins up to and including "high G."

Were he to have what he lazily felt was adequate rest, he would not have the inclination for the exercise recommended, or for going to school or doing his outside reading. As for never getting chilled during winters or being in a draft now and then, he knew he was too busy to be like those people who were always fussing and fretting about themselves.

If that were the best information he could get from this author he might as well pass on. He did and got much the same advice from the next, except this one favored having the plain form of cod liver oil administered in what he called full doses. Furthermore, this author had a distinct leaning toward getting tonsils and adenoids out. Old Sock did not want to swallow all this with his present sore throat, so he passed on to another writer's summarized advices.

This one suited his personal fancy a bit better because he was not so authoritative about tonsils and adenoids. He believed these more or less useless organs should be let alone unless it appeared from the combined opinions of both the nose and throat specialist and the internist that they should be removed. Well, agreed Old Sock in his own mind, his father was an internist and still had his tonsils. An internist who found out what was wrong with people and treated them himself or referred them to other specialists might not do anything hastily about tonsils and adenoids. He liked this attitude best of all.

THEN as luck would have it, Old Sock was gloomily turning through a popular magazine, thinking thus, when he ran across a sure-fire diet remedy for colds. This self confident author made much of the horrible effects of eating combinations of foods, such as proteins with starches, and almost frightened Old Sock's cold out of his food-poisoned body. He had been ignorant of these reputedly baneful effects and was inclined to blame his father for not being thoroughly up to date. This author made it obvious to his terrified readers that they must not lose an instant before starting to eliminate the so-called harmful food combinations forever, and never so indulge again under pain of terrible disabilities, both physical and mental.

The language and statistics which Old Sock had been reading in real medical publications had been only half understood, and it was not nearly so impressive as what he had read in the popular magazine. This last person shot his "facts" at Old Sock as if he really believed what he wrote and expected him to do so without question. There were no "maybe's," "perhaps's" or "possibly's" written in to confuse him, and there was the robust muscle-bound writer's picture displayed in the center of the first page to prove he was right. Old Sock was so impressed by his second look at the picture that he feebly stood up before the mirror to inspect his own puny, weakened, food-poisoned muscles just to estimate how much dieting and exercising he must do to save himself from common colds, to remedy his unhealthy condition and to make himself over into a state of muscle bulging

health. Old Sock saw enough in the mirror to send him back to his bed of aches, thoroughly unhappy and discouraged.

He went to the dinner table only to pick and peck a little at his food. The conversations, if any, might as well not have been uttered for all that he heard. His sluggish brain took in that it was a pretty well balanced meal, as diets go, but it was full of those horrible poisonous combinations. In his depressed and weakened condition he was afraid to risk an argument about his new-found knowledge, and so he forced himself to swallow a combination of hot biscuits, tender juicy broiled steak, gravy, mashed potatoes, string beans, asparagus, out-of-season raw tomatoes, jelly and a piece of luscious apple pie. He had been about to leave the pie, but Old Teaser put in a plea. Old Sock, generously resolving to be the only sick person in the family, ate it himself. Like a true scientist he was going to take a liberal dose of his own poison to prove beyond a shadow of doubt how poisonous it was.

After dinner Dr. Answith went to the living room to read the evening paper, and he saw Old Sock's array of literature on colds. He read that popular article to see what the reading public was getting in a magazine which took questionable advertising, but he tossed it aside with a snort of disgust. Some popular medical articles were very good, and some were very bad indeed. There seemed to be no halfway mark between them. At that time the telephone rang for him, calling him away for two hours.

When Dr. Answith returned, Mrs. Answith was trying to shoo Old Teaser and Cry-Baby quietly off to bed. They were making much more noise and objections than were necessary; The Dumb Cluck was sitting at a table chewing a pencil and scratching her head over an algebra problem. Old Sock called weakly to him from upstairs. Every one else seemed to be acting naturally, so Dr. Answith guessed that the trouble he sensed concerned Old Sock alone.

"Old Sock ate a combination," remarked The Dumb Cluck, grinning a little at her father.

"I never dreamed he would turn goat," said the doctor as he walked up the stairs.

"Dad," said Old Sock plaintively, "I—I feel like I'm poisoned, or something."

"Really? What is it like?" his father asked as he counted Old Sock's pulse and felt around his abdomen. The thermometer was in his mouth, and Old Sock could not reply. "Hm-m, no fever."

"I—think I have a pain . . . right . . . about here," said Old Sock, finally deciding to point to his stomach.

"I don't want to appear unsympathetic, Junior, but I believe your weakened condition has let you in for an attack of 'combination-itis' of the gizzard. . . . Is it really a pain or just an uneasy sort of scared sensation you have?"

"Well," answered Old Sock dubiously, "maybe it isn't really a pain but . . . Say, Dad, what about all this diet combination stuff preventing colds, anyway?"

"As you read it down stairs, it is just plain lush slush," answered Dr. Answith. "That writer has worse than no standing at all among real doctors. The normal human stomach has been digesting everything—omnivorous—when it could get it since the dawn of history. No food faddist or crank is going to change it in your time either. Our civilization makes a lot of nervous dyspeptics and gourmands. The fad diets keep the neurotics alive simply because they eat nothing else. The gluttons won't be bothered with diets. Every time you eat a piece of bread you have swallowed a combination of protein and starch—and fat. Why shouldn't the normal stomach go all the way and digest bread, meat, potatoes, milk, eggs, fruits and vegetables? It should and it does; and it has been proved out scientifically hundreds and thousands of times."

"I—guess I'm feeling better already. . . . Dad, what is the right dope on this cold business—with all the 'lush slush' left out?"

"Hm-m, a moderately active life without undue fatigue, no excesses of food or drink, a good general, sufficient diet, neither too little nor too much clothing, decent personal hygiene and the avoidance of people with acute colds; all those are about the best precautions for most of us. Constant dosing with 'patent medicine' or following rigid faddish diets usually does more harm than good either for prevention or for cure of colds.

"Our buildings are heated without the air being moistened, and that is rather bad for our nasal membranes. City smoke in the air doesn't do us any good either. At present, we can take them as we find them or go live in the tropics or with the Eskimos where they don't have many colds. . . . If we contract a cold, we should take care of ourselves by additional rest, mild laxatives, a little restriction of food and plenty of water. The honest doctors can't cure our colds, but they can make us more comfortable and guard against complications until we make a natural recovery. That's the 'dope' you wanted. Now how is your—er—nervous dyspepsia?"

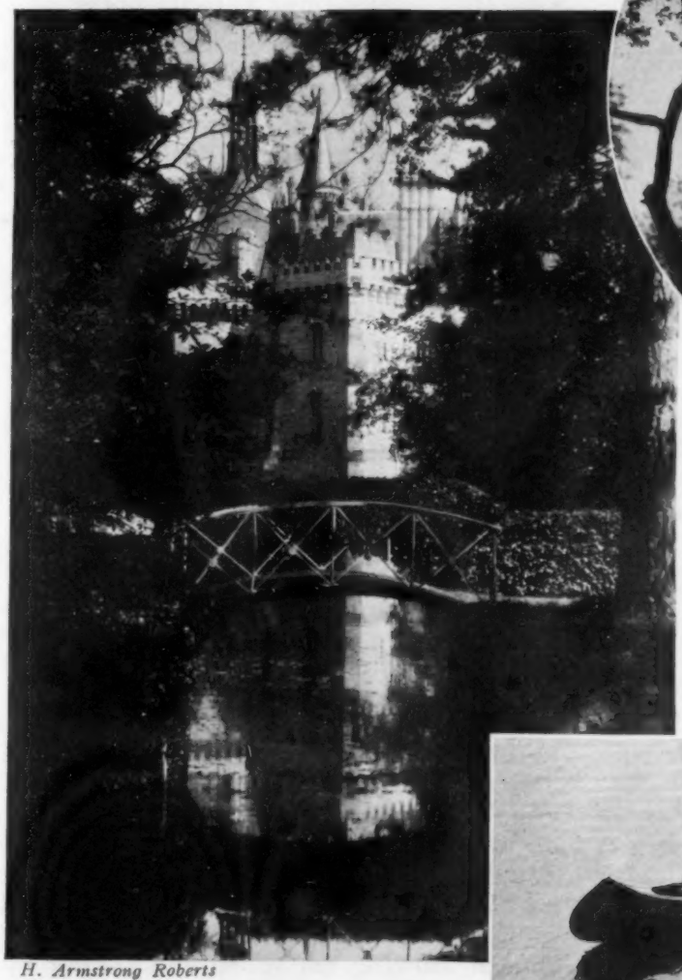
"Er—it's all right. Say, Dad, it seems like—"

"Yes, thousands of doctors are trying to solve the mystery of the common cold. What we need just now is a philanthropist who would be willing to endow the Downfall of the Common Cold rather than some building as his monument. Then there might be fewer sick people who must go to hospitals. . . . It's a funny old world, isn't it, Junior?"

Reflections from the Water

Philip D. Gendreau

R. I. Nesmith



H. Armstrong Roberts

The world turns softly
Not to spill its lakes and rivers,
The water is held in its arms
And the sky is held in the water.
What is water,
That pours silver,
And can hold the sky?

—Hilda Conkling

Philip D. Gendreau

BOBBY . . . With Modern Improvements

By ROSAMOND LEHMAN

EVERYBODY pitied Jane when Bobby was born. Not that she didn't want him—quite the contrary. But Jane was such a healthy, vital person, and the baby was the most weakly infant we had ever seen. On our first visit we tried to murmur the usual compliments, but that didn't fool his mother in the least. With the same chin out-thrust defiance as when she had electrified her family by registering in a dental college, Jane informed us that Bobby was a wonderful baby. In a way, she was right. He was a wonderful baby. It was certainly wonderful how he contracted all the school sicknesses before he ever came in contact with a school child. It was nothing short of miraculous the number of hours he could cry nightly. What was more wonderful was the way Jane managed to run the house, care for the baby and then stay up with him half the night. But no one ever heard her complain.

By the time he was 2 years old, Bobby was a large headed, skinny, pale little boy who stuttered so badly as to be almost unintelligible. The family doctor suggested that suburban life might help his condition, so the family moved to a small isolated community on Long Island. Bobby reacted to the move quickly—and in a most dismaying fashion. He had always been a poor feeder, victim of a nervous stomach which practically turned inside out at the slightest provocation. Now, in addition to these tribulations, he would awaken from his sleep, screaming with terror, and then would shudder for hours before he could fall asleep again. What caused it? No one could discover. For two years his nightly screams brought his patient, comforting mother running to his side.

THEN the family moved to another Long Island community about two miles distant. Bobby wandered interestedly about the new house, peering out of windows and getting acquainted with the stairs. When night fell he ate his supper, undressed without protest and slept the whole night through!

Surely moving could not produce such a far-fetched result. Yet from that night on, Bobby slept peacefully until morning! Years later, somewhat shamefaced, Bobby helped his mother trace the cause. They recognized the root of the trouble in two other tots in their old neighborhood who had taken advantage of Bobby's defencelessness and made his life miserable with every kind of torture. Poor Bobby ran constantly in daily dread of being put in garbage pails, locked in cellars and suffering all the torments which children can conjure up and which his nervous imagination painted all too vividly. Why didn't he confide in his mother at the time? Because at that age he was too young to trace his nightly fears to his daytime companions, and he was ashamed to tattle. Unusual? Not at all. How many busy parents know what goes on in the minds of their little youngsters, what causes their naughtinesses and fears?

BUT Bobby's troubles were by no means over. Although the midnight terrors had become things of the past, his stuttering had grown considerably worse. Something had to be done. To make the problem more difficult Bobby's father also stuttered badly. Only mother could cope with this. Her first rule was that the word "stutter" must never be mentioned within earshot of the child. Until he was 18 years old Bobby never knew that he stuttered.

Next followed the more pressing problem of breaking the habit. Jane thought the matter out carefully. Even at the age of 4 the boy showed a decided liking for dramatic stories, often acting them out by himself. This proved a valuable clue.

"Bobby dear, you must speak slower and pronounce your words more clearly," urged his mother. "When you go to school they will have plays, and it's fun to act in plays. But if you don't speak distinctly the audience won't be able to understand you, and the teacher won't be able to give you a part." "Bobby, in school you'll learn to read. Sometimes you'll be called on to read before the class. It is important that you pronounce your words more clearly and slowly so they can understand you." Bobby's mother paid particular attention to her own speech, slowing her speed and setting an example which Bobby carefully followed. When he stuttered unintelligibly through a sentence he was gently told to repeat it more slowly and distinctly.

In another year, Bobby entered kindergarten. Before introducing her son, Jane spoke to the teacher. She explained that Bobby didn't even

APPREHENSIVELY, BUT WITH GREAT EAGERNESS, BOBBY SET OUT WITH HIS TROOP FOR THE BOY SCOUT CAMP.

know he stuttered and asked the teacher to use the same method of slowing down the child's speech as employed at home. Fortunately, the teacher was a gentle, sympathetic young woman. She gladly cooperated, with the result that before he was promoted to the first grade, Bobby's stuttering was completely cured, returning only in times of emergency. As long as he was well, the boy spoke slowly, distinctly and, because of the stress laid on pronunciation, a trifle pedantically. But whenever he became ill the stuttering returned. This phase continued until his eleventh year, when he was operated on for a ruptured appendix. For the first time under stress, the stuttering did not return, and finally Bobby's patient mother knew beyond all doubt that it was gone forever—a real feat when you consider that Bobby's father still stutters badly.

This should have marked the end of one family's "child troubles." But Bobby was the sort of youngster whom doctors term interesting and mothers pray the stork won't wish on them. The nervousness which had already manifested itself in night terrors and stuttering now broke out virulently in another direction. Bobby's whole digestive system staged a complete rebellion. From infancy he had always been a "feeding problem." Jane had been forced to concoct the most complicated formulas and meals. Now Bobby found constant difficulty in retaining food. He fell victim to excruciating headaches, and his ribs showed through his skin like xylophone keys. One doctor after another admitted himself baffled. Bobby responded to none of the usual treatments. Finally it was decided to take all fats and milk from his diet. This proved the most satisfactory solution. Although he gained little weight the stomach upsets and headaches became less frequent.

But these constant upsets, combined with his nervous disposition, had made Bobby a shy, lonesome little boy, avoiding the companionship of neighboring children and only happy when curled in some quiet corner with his nose in a book. No amount of urging could persuade him to mingle with other boys.

UNDAUNTED, Jane attacked this new problem. First she persuaded her husband to put up a swing, a set of rings and bars and other gymnastic equipment in the back yard. Then she

sacrificed the smooth green grass to a chicken coop. Between the athletic apparatus and the chickens, the small boys of the neighborhood began to drift in. And what a paradise of liberty that back yard became! Parental "don'ts" were parked at the outer gate. Bobby's nervous grandmother was admonished not to watch the children from the window. The result was that the youngsters, who originally came to watch the chickens and to swing on the bars, ended by habitually drifting into "Bobby's yard." At first Bobby hung back, pleased yet rather scared when the fellows dropped over. After a while he gradually entered their games. Since the equipment was on his own home grounds he took advantage of every opportunity to practice on the bars before the other children came over. Gradually he became more proficient and more daring. He ventured bolder tricks on the apparatus until he won the admiration and respect of the other youngsters. The effect on his self respect was inestimable. Instead of hanging back from his playmates, ultimately he became their leader.

Then came the Boy Scout stage. To have children of the neighborhood saunter into his yard to play was one thing. To venture forth into strange territory among new youngsters filled Bobby with panic. But, buoyed by the gently persistent interest of his mother, Bobby was at last encouraged to join a troop. At first he took his tests and scout manual too seriously, as he did all his studies. But when summer came and scout camp was opened, he was sent away from home for the first time.

This involved several problems. Should Bobby continue his rigid diet, thus marking himself at camp as a creature apart from the other youngsters, or should he cast discretion to the winds and take his chances with his constitution? Jane consulted the doctor, who was also an understanding parent.

"Shall I keep him to his diet for the sake of his physical well being, or let the diet go hang for the sake of his immortal soul?" she demanded smilingly.

"Better worry about his soul over the summer," advised the doctor, "and we'll take care of the body in the fall."

So Bobby went to camp, in fairly good health (for him), a trifle apprehensive but very eager. And the outcome was exactly what his understanding mother had anticipated. With the same fervor with which he did everything, Bobby determined to pass his various scout tests. Although he was actually far from an athletic type he labored and strained over the sports and gymnastics until he reached his goal.

More important still, he earned the respect of the other boys and learned to live among youngsters of his own age, assuming his own responsibilities and acquiring self reliance. He

HAD HE TURNED INTO ONE OF THOSE SHY, LONESOME LITTLE BOYS WHO WERE HAPPY ONLY WHEN AT HOME CURLED UP IN A CHAIR WITH A BOOK?
MARY ALICE STODDARD

acclimated himself to community living, making his own decisions and solving his own problems.

One of the most outstanding traits developed in this "shrimp" was the amazing courage he manifested in the face of suffering. As his mother had feared, the headaches returned with all their former agony, and it was no unusual occurrence to find Bobby, pale and shaken after a night of violent stomach upsets and headaches, chin out-thrust in that familiar, Jane-like expression, his white lips shut firmly against any word of complaint.

By the end of the summer, when the other boys returned hale and husky, Bobby was a mere ghost of his former self; thin, sallow, but triumphant and proud of his camp accomplishments. He had earned self respect and the ungrudging admiration of the bigger fellows who at first delighted to poke fun at the "queer little shrimp." After several years at scout camp, Bobby became a Gold Eagle Scout and was chosen to attend the Jamboree in England.

It took all the first winter to put the youngster back into physical shape again, but between them his mother and doctor finally succeeded. Meanwhile, because of his new found confidence, Bobby showed marked signs of leadership in school. He had learned how to get along with his schoolmates and to handle them tactfully. Gradually he was given more responsibility by the school authorities as he developed the ability to handle it.

This stage continued, with Bobby taking more and more on his shoulders. His family is musical. Bobby learned to play the piano under the efficient tutelage of his father. He had a fair amount of talent and decided to play for amusement only. His father viewed the decision calmly, and Bobby, after the first couple of years, concentrated on popular music. Needless to say, this added to his popularity. He played for his friends' pleasure and was an asset to any gathering. Because he was accustomed to having his relatives step forward to the piano or play the violin to oblige their friends, his attitude about his musical ability was both modest and obliging.

Bobby was growing up. With each summer spent at the scout camp he developed more and more self reliance and sound judgment. And this growing-up process cemented a relationship between the son and his mother which was unusually fine. When Bobby started the school and camp regimen, Jane went back to dentistry and actually became a one-woman clinic. She turned her sun parlor into a dental office and gave free treatments to every one sent by the local charity societies. She also organized the dentists of the community to give their services in the more specialized branches. Besides her activities in this direction, she was president of the local Parent-Teachers Association, was active on the Community Chest Drive and the Family Service Bureau, was a leader of the Girl Scouts and assumed responsibility for the welfare of several deserving families in which she takes a personal interest. Her constant uncomplaining activity, which keeps her bustling from early morning until the wee, small hours, as well as her duties as a housekeeper and mother of two other children besides Bobby, sets an example of impressive selflessness which has given her first place in her children's esteem. To them it is a real privilege to help Mother and to be with her.

In spite of all her rushing activity, she and Bobby had one regular date with which nothing short of calamity could interfere. Every Wednesday night at 10 o'clock they sat together in the living room listening to Bobby's favorite radio program and talking things over. Not that Jane liked the program, but not for all the world would she have admitted that to Bobby. This was their night, a time when confidences come easily to an adolescent boy comfortably alone with his mother.

Any advice she gave was delivered with the same detachment as the dental advice she delivered in her clinic. Bobby's problems were considered with the same serious respect she would have accorded to another adult. There was no danger that she would turn the boy away with a flippant answer.

I have known Bobby's family, three generations of them, uncles, cousins and aunts. I know how Bobby would have developed under the guidance of the average mother. He was patterned to be a scrawny, nervous, misanthropic man, timid and unhappy, seeking his escape in books, his self respect in cynicism. Today, Bobby is a busy freshman at college. He graduated valedictorian of his high school. He was rushed by several fraternities at college and is one of the most popular members of his class, an excellent student and a normally healthy boy. Gone are the agonizing old headaches, the stuttering, the terrifying nights and the instinctive shrinking from human companionship. What was that old ballad? Oh, yes: "A boy's best friend is his mother."

[Note.—This is an experience story which teaches many lessons. The attack on speech defects by emphasis on slow distinct speech will be regarded by many psychologists as outmoded; yet in this instance it appeared to work. Perhaps the recovery from speech defects may be attributed more to conquest of the underlying psychologic difficulties than to the emphasis on deliberate speech to which the author credits the improvement. This boy came through a severe ordeal and was apparently none the worse for it. A similar plan might not be advisable for other children. The apparently serious risks to which this boy's health was subjected were assumed under close medical supervision. Readers who are disposed to embark on a similar program for what appears to be a similar need should not overlook the importance of keeping in close touch with the physician.—Ed.]

"ATTENTION! REST!"

By Berenice Lowe

JANET BRADFORD was trying to finish washing the dishes. The phone rang again, the third interruption to her work in twenty minutes.

"Hello, Janet." It was Beth Carter. Janet was glad to hear Beth's voice; Beth was such a restful soul. "How are you?"

"Hello, Beth. I guess I'm fine."

"That sounds as if you aren't feeling just tiptop."

"Oh, I'm all right, Beth, only I never get time to do anything, and I'm so tired."

"You've said that often lately, Janet. Are you sure you really are well? It worries me."

"It worried me—and Tom, too. He made me have an examination. So I've had a very thorough one. The doctor says I'm fidgety and tired out, but that there is nothing wrong. So don't bother your curly head about me. My complaint is just a habit, I guess!"

"Didn't the doctor prescribe anything?"

"No pills, if that's what you mean. He just ordered rest."

"How silly! How can you rest? You haven't time."

"He went over my whole day with me and did work out a plan. Only, I haven't stuck to it."

"Then you're the silly one, I think. But what I called you about—Jim's birthday is Thursday. I want to have a dinner for him, then a treasure hunt until 10, and then we can go to The Pines and dance."

The birthday party was a great success, but Friday Janet herself said she was "a wreck." That day her mother returned from a two-month visit on the coast. She was shocked to see Janet looking so worn. When she was told about the examination and the rest schedule, she said, "What is the schedule?"

Janet handed her a typewritten sheet. On it were these instructions:

7:00—Get up. Take lukewarm bath. Dress in comfortable clothes. Wear low-heeled oxfords, not bedroom slippers.

7:30—Get breakfast.

7:45—Breakfast. Family must cooperate. All be at breakfast on time.

8:15—Bid husband and daughter goodbye. Detach door bell.

8:20—Remove shoes. Lie down. Relax. Rest.

8:30—Get up. Put on shoes. Tie them snugly; they give the body good support. Wash dishes.

Janet's mother looked up from the paper. "Have you any low-heeled oxfords?"

"No," Janet admitted. "I always wear high-heeled shoes. I never have foot trouble. I didn't pay any attention to that."

"Doctor's orders," said her mother. "How about your golf shoes?"

"Gave them away. I've been too tired to play this summer. They looked tacky, anyway."

"Looks, Janet! You, who care so much how your clothes look, ought to see yourself in the mirror. You sag all over! You're going down town with me to get shoes." She read on:

9:00—Do upstairs work; make beds and straighten rooms.

9:20—As at 8:20. Rest.

9:30—Clean bathroom. Finish upstairs work. Plan to take down everything needed during morning. Stairs must be climbed only once.

10:00—Straighten living and dining rooms. Set table for lunch.

10:20—As at 8:20.

10:30—Kitchen work.

11:00—If time, read until 11:30. If not, rest at 11:20.

11:30—Prepare lunch.

12:10—Lunch.

Janet's mother smiled. "How about the hours of phoning you do with the girls? Didn't he put that in?"

Janet blushed. Her mother had scolded about the telephone before. "Yes, he did. From 3:30 to 4:20, provided I am home, and from 7:30 to 8:20 in the evening. I am to tell my friends that, too, if you can imagine it."

Her mother could imagine it, and she herself notified the girls in Janet's crowd that visiting hours were limited.

After three months of the rest schedule, which included a nap and a short walk in the afternoon, Janet felt like a new girl. Her rest period was shortened to five minutes. She has never since given up this habit of resting five minutes of every hour, and her friends say that now she has more stamina than any of them, and she doesn't know the meaning of fatigue.

Nor is Janet the only one profiting by routine rest periods. Many patients with inactive tuberculosis are staying well on a similar schedule. One harassed business man was told he needed rest so badly that he must give up his work or die. But he insisted he would die if he left his work. He was, however, quite willing to follow a severe rest schedule. At five minutes before each hour his secretary called him from his work, even from the most important conferences. He retired to a quiet, airy but darkened room, where he taught himself to relax com-

pletely. When the hour struck, five minutes later, his secretary again called him, frequently from a sound sleep, and he returned to his work, rested and refreshed.

A professional man did the same thing, following his schedule as closely as possible. He is well and strong, only because he rests ten minutes between all his professional engagements.

Many patients suffering from fatigue say that they cannot rest, they cannot relax. Yet with persistence they can teach themselves to do so. First, however, they find they must have a constructive mental attitude. They must have the desire to relax and enjoy resting. Second, it is imperative that they make their minds blank. This is often a struggle, for worries will have sway. Third, the relaxation will come more readily if it is invited at the same time every day. Like babies, adults are less nervous and sleep better if they eat and go to bed daily at the same hour.

Exercise frequently stimulates relaxation. Physical fatigue fosters sleep, while mental fatigue drives it away. Walking is excellent but cannot be fitted into every one's day. Exercise to induce sleep is best if taken on the bed, so that relaxation can follow immediately. The well known bicycle-riding exercise is excellent. Lying on the back, describe circles in the air with the feet, as if pedaling a bicycle. This may be done until the muscles tire. Then drop the feet, lie flat with arms extended comfortably and relax. Stretching or stiffening the body is as effective as any exercise. This is accomplished by making the muscles tense, beginning with the foot muscles, then those in the legs, abdomen, arms, hands and lastly the neck. Hold the body stiff for a count of ten. Relaxation after this exercise really is possible.

Every person, whether well or ill, should relax before falling asleep. If you check on yourself you may discover that although you are in bed and ready for sleep, several muscles are still tense. Perhaps you are holding your head on the pillow rather than relaxing into the pillow. Your fists may be clenched or your arms unwittingly may support the weight.

Relax. It may be an effort, but it is one task that doesn't cause fatigue. The demands on our energies may seem like the orders of war, "Attention! Forward march!" It is up to us to give the countercommand, "Attention! Halt! Rest!"

COMPLETE RELAXATION AND REST WILL COME MUCH MORE EASILY IF TAKEN AT REGULAR INTERVALS, JANET DISCOVERED.

MARCUS WHITMAN

✣ Pioneer Physician ✣

By SIBYL WINSER

THE small wharf at Liberty Landing, Missouri, was filled with people eagerly awaiting the coming of the river boat that was to take the Marcus Whitman party West. It was on the morning of May 1, 1836, and it was an event for which two women had been preparing for over three weeks and anticipating for more than a year.

"There it comes," some one shouted excitedly. And slowly the prow of the boat emerged from around the bend in the river. The members of the party began again their last round of goodbyes to friends and relatives whom they might never see again.

At last it seemed that Narcissa Prentiss Whitman, wife of the pioneer physician, and her friend Eliza Hart Spalding, wife of the Rev. Henry Harmon Spalding, were about to embark on the perilous Overland Journey to the great Northwest territory.

But the boat did not seem to be leaving its central channel as it should be doing to draw up to the pier. Without slackening its speed and with two loud blasts from the ship's horn it went steaming right on past Liberty Landing.

Obvious surprise and disappointment hushed the excited crowd.

Perhaps it was because of word that women were along that some members of the American Fur Company's caravan had determined to leave the missionaries behind. A smaller party composed of the Rev. Spalding, William H. Gray and others had gone ahead with the stock and wagons. Dr. Whitman had stayed behind to care for the dying wife of a missionary to the Pawnees, Mrs. Satterlee. Her funeral had just ended when the boat steamed past without regard for promises made in St. Louis.

For a month the Whitman party made forced marches overland, hoping to overtake the caravan. They were not altogether sure that they would be allowed to join it even if they did catch up to it.

Late one Saturday night they encamped within eighteen miles of the Otoe Agency, South of the Platte River in territory that is now Nebraska, on the edge of dangerous Indian country. Camp was pitched with the view that the quietude of the Sabbath was to be observed as usual. However, when Dr. Whitman was called into the Agency to tend a sick man, he learned that the caravan had passed through there only the day before. A messenger was dispatched to the party with this information; whereupon they broke camp and set out to overtake the caravan. The pursuit was at last successful, and white women crossed the Continental Divide for the first time in history.

The Whitmans reached old Fort Walla Walla at the intersection of the Columbia and Walla Walla rivers on Sept. 1, 1836. There the first American white home in all the Northwest was established.

IT IS THE SUCCESS of this undertaking which is now being commemorated at the Whitman Centennial Celebration at Walla Walla, Washington, August 13-16, 1936. The memorial services will be participated in by the American Medical Association during the first day; the next day, the Daughters of the American Revolution, American Association of University Women, General Federation of Women's Clubs and the National Federation of Music Clubs will take part. The following two days are reserved for the Oregon Trail Memorial Association and the Congregational and Presbyterian National Assemblies, respectively. During the first day's session a portrait of Dr. Whitman will be unveiled. Painted by Ernest R. Norling, Los Angeles, it is a gift from the doctors of the Pacific Northwest to the American Medical

Association for presentation to Whitman College. Among the historical exhibits will be a collection of surgical instruments used a century ago, loaned by Dr. Frederick C. Waite, Western Reserve Medical School, Cleveland, Ohio.

During the decade following his arrival, Dr. Whitman became the physician and chief member of a far-flung missionary enterprise with four different stations among the various Northwest tribes. His own station, Waiilatpu, was like an oasis in a great desert to the pioneers who were beginning to come. With their supplies long since exhausted by the journey, the immigrants stopped for provisions and medical aid. Help was generously given, whether or not they had money to pay.

This journey of 1836 was not the first Dr. Whitman had made. After securing with difficulty the permission to act as a medical missionary to the Old Oregon Territory, he set out with Samuel Parker early in 1835 for the far West. On this journey the missionaries were quite unpopular with the rough men in the Fur Company's employ. Whitman wrote: "Very evident tokens gave us to understand that our company was not agreeable, such as the throwing of rotten eggs at me."

However, at Bellevue when an epidemic of cholera broke out among the men, three deaths were the result. Had it not been for the timely and efficient ministrations of Dr. Whitman certainly more would have died. Little antagonism to them remained after this.

On July 12, 1835, they reached the Rendezvous, as the meeting place of the Eastern and Western fur companies was called, and the news that a doctor was present spread rapidly. The day after their arrival Whitman extracted a three inch iron arrowhead from the back of the famous mountaineer, James Bridger. Thus, Whitman became the first American physician to perform a surgical operation West of the Rockies.

There are many true stories recorded of his kindness and unselfishness. In 1844, a great caravan train passed through the Whitman station; it left behind seven orphan children, whom the Whitmans adopted. Unfortunately, their own baby was drowned when only about 2 years old. However, eleven children were counted in their family: a little half-breed boy, David Malin; the two half-breed daughters of the mountain men, Joe Meek and James Bridger; Dr. Whitman's nephew, Perrin; and the seven orphan Sager children, five girls and two boys.

DR. WHITMAN met death serving those who slew him. Eyewitness accounts of the massacre tell that two Indians came in and asked for medicine. As the doctor was getting it, one of them struck him on the head with a tomahawk, knocking him senseless to the floor of the kitchen. One of the Sager boys, convalescing from the measles, attempted to draw his gun, but was killed. The Indians believed that the doctor's medicine was what had killed their sick ones, rather than the malady he treated. Fourteen were slain on the mission grounds, and one man was drowned in attempting to escape. Mrs. Whitman was the only woman killed, perhaps because she also had given medicine to Indians who afterward died. Over fifty women and children were kept as captives until ransomed by the Hudson Bay Company's local officials, and two children sick with measles died as a result of neglect.

Most of the victims of the massacre are buried in one great grave at Waiilatpu, near the mission site. On the hill above rises the slender shaft of Whitman Monument, erected in 1897, on the fiftieth anniversary of the massacre. A bill has passed Congress making the mission site a national monument, and present plans are to reconstruct the buildings as they appeared in 1847.

Health and the Circus (Continued from page 689)

Little has ever been told of circus health programs. Even though existing, they are missed by the visitor whose interest characteristically is in the glitter, glamour and amazing skills and feats in the arena. Furthermore, back yard life is and should be private. Even that erudite story hunter Roland Butler, general press representative, respects the private life of this community in a manner not found in other amusement circles. Nor, interestingly enough, have circus doctors, from the late pioneering and beloved Williams Shields to the present incumbent, sought or even desired personal spots in the limelight. Theirs, they have felt, is the privilege of service. They have, according to professional confreres, done well. Great clinicians like the late Neil Hoskins of Detroit have even served as locum tenens. As with all family doctors—and that's what they are—circus medical directors have the satisfaction of knowing they have their own peculiar place in the hearts of their community.

That, after all, is what every physician desires above all else, whether he has his own practice and little hospital or whether he tours the country with the first circus hospital, the "Florence Nightingale," as medical director of the enormous caravan which has come, to most people, to be the true exemplification of the word "circus," the distinctively American amusement.

JIGG'S TRICK

Part I

By Harriet Martin

GEORGE WESTBROOK ADAMS was 8 years old, and as strong and brave and good as most boys of his age. His school teacher seemed to approve of him; he practiced pretty regularly for his music teacher, and the other boys in the neighborhood always liked to have him play on their team. But at home he was still the baby of the household, and his own family failed to appreciate his manly qualities—at least it seemed that way to George. He never said anything to them about it, but he thought about it a great deal and kept wishing there were some way to make the people in his own house show him the same respect that outsiders did.

In the first place the family never called him by his right name. They still persisted in calling him Jiggs just because when he was a baby he had been a chubby little fellow with a rather big, rather bald head, reminding them of pictures in the "funnies." He himself couldn't even remember back to that time. To Mother and Daddy, who had two older children, he always seemed very small and very young; and to Hal and Joan, who were several years older, Jiggs was just the nicest, jolliest kind of plaything. "They have me do tricks for their friends or get me to talk, just to make them laugh—like a trained dog or a monkey," he told himself unhappily.

Hal and Joan were both in high school now, and both had their names on the honor roll; but George's grade had no honor roll, only monthly report cards with marks for attendance, promptness, behavior and a few things like that. Parents took it for granted that you would always go to school and on time, unless you were really ill, and that you would never get "unsatisfactory" on your report card. As compared with high school, there seemed to be little chance in the grammar school to distinguish oneself.

Hal played guard on the high school football team and had helped to win a championship last fall; and when he wore his sweater with the big G for Grandview High School, every one knew about it. They called him "Hal Adams" and said it in a rollicking, glorious way, sort of like "Hladams," that suggested sportsmanship and success and comradeship. Joan had always been the best in the family with her music; she could play the piano nicely when she was a very little girl and was always appearing in recitals. Now she played in the high school orchestra and sometimes even accompanied grown-up singers in quite pretentious programs.

Long ago, in those days when George was the chubby little fellow they first began to call Jiggs, Uncle Harry and Aunt Grace from Buffalo were visiting the family. Because they had no children at their house they were especially interested in the Adams children. Hal was Uncle Harry's namesake, and so Uncle Harry was always proud of Hal's success in athletics. He talked to Hal a long time about the things he must do to become a good football player. Uncle Harry had been one himself in the university. Then they wanted to hear Joan play the piano, and she played and played for them—a very long time, it seemed to little Jiggs, whom nobody noticed much.

He had slipped down from Aunt Grace's lap and crept about on the floor; then he wanted to play the piano too, and so he stood on tiptoe to reach the keyboard with his fingers. It was very disturbing to Joan, of course, to have little unexpected bangs out of harmony with her own performance, and it also annoyed the others, who were listening politely. So Hal had playfully picked him up, put a cushion on the floor in a corner and stood Jiggs on it upside down. This was such a different experience that it interested Jiggs; he didn't cry, and he rather enjoyed having the others notice it and smile at him. Hal sat down again, and the grown-ups turned their attention to Joan's music once more.

Jiggs did not quite know what to do about himself. He was behaving like a big boy quietly doing his stunt, and, besides, he didn't know how to get his chubby little body right side up again. So he just stayed there, even after he began to feel queer and dizzy. It wasn't until Joan had finished all her music and the big people were all talking once more that Mother suddenly saw him looking red in the face and uncomfortable. "Mercy, Hal! That child!" she exclaimed. Aunt Grace said, "The poor baby!" and Uncle Harry murmured, "A darn good little scout, if you ask me." But Hal just said, as he turned Jiggs right side up and put him on his feet, "You're all right, aren't you, kid? You can do a good trick as well as anybody!"

THIS pleasant attention from every one made George feel much happier. A warm glow spread all through his small body, and he thought of this standing topsyturvy as being in itself a delightful sensation. After lunch that day he had taken the same cushion from the davenport to the corner where Hal had placed it, then humped himself over with his head pushed deep

into it, and called, "Do trick. Do trick!" till Hal had come and put his feet up against the wall. All the others had dutifully come when Hal called and paid their respects to this achievement although they were really just amused at the funny sight of the chubby little boy.

After that, time and again, Jiggs would drag his cushion to the corner, double over and shout, "Do trick!" until Hal or some one else came to turn him upside down; and as long as his assistant would patiently wait, he stayed there. Finally Hal said one day, "Look here, fella! If you're going in for this performance as a regular thing, you'll have to learn to manage your own feet. Put 'em up yourself!" The little boy tried and tried, raising first one foot, then the other; but push and puff as he would, he couldn't seem to swing his whole body upright.

"You'll learn," Hal encouraged him. "Keep on trying. Don't be afraid to push your very hardest, as if you were going all the way over." Then he moved the cushion out into the middle of the room and showed his little brother how to turn a somersault.

When Jiggs could do that, Hal started him in the corner again, saying, "Now start a somersault, and when your feet touch the wall, just steady yourself." Jiggs tried again and again, and by the time he was 3 years old he could get himself into that strange position and keep his balance for long minutes at a time. Often his mother would discover him, red in the face, bravely keeping his feet up as long as he could. "Darling child, you'll bust your little self doing that if you aren't careful." She would stand him on his feet again, and Jiggs would reply sturdily, "I do trick."

ON RAINY afternoons the boys and girls of the neighborhood who were friends of the older children seemed drawn to the Adams house. Perhaps it was because one girl and one boy there made it a natural gathering place for all their friends; perhaps it was because Mrs. Adams always seemed as pleased to see her children's friends come there, as her own, and she often suggested pleasant things for them to do, games to play or things to make. When it was cold and a big wood fire blazed in the fireplace she handed out the corn popper and popcorn, the old-fashioned kind "on the ears" that they had to shell off before popping, and showed them the sport of roasting apples over the fire.

Sometimes the crowd would collect around the piano and sing high school songs and college songs they knew, while Joan played for them. When the boys wanted more strenuous activity and scuffled among themselves, Mother would suggest an orderly wrestling bout, well managed and confined to the middle of the room. Hal's strength and skill won out there; he could almost always get the best of the other

SUCH GATHERINGS AS THESE WERE PARTICULARLY TRYING TO LITTLE JIGGS, WHO VAINLY SOUGHT TO ATTRACT AND HOLD THEIR ATTENTION WITH HIS ONE AND ONLY TRICK.

SOMETIMES JIGGS COULD MUSTER A PRETTY GOOD AUDIENCE TO WATCH HIS PERFORMANCE NOW THAT HIS EQUIPMENT WAS INSTALLED IN THE BASEMENT.

boys; and while he contended with one of them, the other boys formed an admiring and cheering circle about them.

Such occasions were particularly trying to poor little Jiggs. Everybody was so much bigger than he, and if they paid him any attention at all it was sure to be the wrong kind. "How's the kid?" the big boys would ask, giving him playful punches in the middle that felt much harder to him than the boys intended. The girls wanted to treat him like a doll, he thought disdainfully. "Isn't he *darling?*" they would exclaim, running their fingers through the soft fuzz that was growing on his head or even trying to twist it into little curls.

Neither of these was the kind of attention that George appreciated. "I do *my* trick!" he would announce, taking his cushion to the corner; and all the big children would laugh as he did so. "Jiggs and his trick!" Joan would say, only giving him a smile over one shoulder as she went on playing. And if he stayed on his head a particularly long time, instead of applauding him as they did Hal for his stunts, they would come and tickle him or poke him until he had to bend in the middle and spoil his trick.

One day when Hal came on him performing alone he said, teasingly, "Why the cushion, little one? Afraid of hurting your head?" and he took it away, a little roughly, lifting George by the feet, pushing away the cushion and then letting George's poor head down again on the hard floor. The little boy found, however, that he could get along without the cushion, and after getting used to the bare floor, decided it was a better trick that way.

Gradually he improved his performance. "Get out of the corner!" Hal had commanded another time. "You can do that stunt in the middle of the room just as well!" That was hard at first, but by trying and trying, he found he really could keep his balance away from the wall; and then he began trying to stand on his hands. Keeping himself balanced with hands and head on the floor, he would gradually push himself up and up. It took a lot of trying and tumbles until he could do that dependably.

"What a trick!" Joan said a little scornfully to Hal one day when she saw their little brother upside down in the middle of the floor. "Does he expect to spend his life wrong side up?"

"You have to hand it to him for endurance," Hal said. "I never saw a kid his age—or any age, for that matter—that could stay that way so long! He's done it so much, I honestly believe he could go either end up without noticing the difference. Since he's so gaga about this particular stunt, though, I'm going to fix up my old trapeze for him. He can get variety by hanging upside down part of the time."

Hal had been as good as his word about that, and soon George spent long hours by himself in the basement, where the trapeze had been installed with a thick pad on the cement floor under it. "You've trained your dome to be pretty tough," Hal said, "but it just might crack if you landed on it down here, so keep the pad underneath even if you don't expect to use it."

So George practiced hanging from the trapeze, swinging and balancing. By the time he went to school he was pretty good at it. As he grew taller, Hal put the trapeze higher for him; and when he could get other boys to join him in the basement he had a pretty good audience. When there were guests of the family with whom George felt at home he would modestly offer to do his trick for them and would stand on his head or his hands as long as any one would pay attention. But whenever he mentioned it, either Hal or Joan or one of their friends would groan, "Jiggs and his trick!" as if they were very tired of it. So he said less and less about it as time went on, and practiced by himself, mostly in the basement.

"There's no chance to show speed in your specialty," Hal said, "so you'll just have to concentrate on form and endurance." Although he said it jokingly, George took it to heart; and when he was big enough to tell time, he used to take the kitchen clock downstairs with him. He couldn't be sure of his form, though he worked for that too; but by timing himself he knew his endurance was pretty good.

Then one day when George was in second grade, Mr. Adams came back from a fishing trip with Uncle Harry very enthusiastic about a place where they had been. "It's the most beautiful part of the North Woods we've seen!" he said. "There are a couple of big cabins overlooking the bay, perfect climate, fishing, swimming, boating—and relaxation. Lots of time and space up there. Harry and I are considering trying the place for a whole season, if the rest of you like it."

"What conveniences are there?" asked Mother.

Mr. Adams smiled ruefully. "That," said he, "is a typical housekeeper's question. I have to admit there are practically none. These cabins were part of a loggers' camp in the old days, and except for a good deep well and substantial log buildings there's very little else. If we like the place well enough to buy it we'd have to make a good many improvements, but we three men could do most of that ourselves." His smile included Hal in the "three men," and George felt a little chill running in his insides because he was left out. His chin quivered a little, and he closed his teeth tightly so no one should see. "Nobody thinks I'm any good," he thought.

FATHER kept on telling about the camp. "We can easily put the place into permanent shape if you people like the country. But we'll be *miles* from the town, on a wood road, and with no telephone, no piano—not even a bathtub or a kitchen sink at first. We'd have to try you out up there. Think you could get along without the high school crowd for a while?" he asked Hal and Joan. "How about it, no Athletic Association and no Glee Club?"

They all began to talk at once, and only George noticed that nobody asked how *he* would like it. He had been prepared to have somebody say that at least there would be lots of room for his somersaults and handsprings. He was really thrilled about the camp, as his father had described it, and kept thinking about the interesting things one could find in so much woods and along the beach of such a big bay. Personally, he would be very glad to get away from the high school crowd for a whole summer, in a place where each one had to find his own amusement. There would be less talk of football championships and piano recitals, of dramatics and honor rolls and credits. Off there, in that wild sort of place, he, George Westbrook Adams, aged 8, would have as good a chance as the others to be independent and happy.

As it turned out, the camp in the North Woods was even better than George had expected. Their cabin had just two big rooms, one with a lot of built-in bunks and the other with a big stone fireplace where fires of pine logs crackled gorgeously on chilly evenings. The few pieces of furniture, besides some dishes and a great deal of bedding that had been sent beforehand, were soon installed. In spite of the long trip to town twice a week to bring provisions and the daily trips to a farm for milk and vegetables, everything seemed very simple. Even Mother laughed over the awkward way of washing dishes in a pan that had to be emptied outdoors, using water pumped up from the well and heated on a small oil stove. She laughed because she said that since this was her only household chore she couldn't complain about the inconveniences. She had much more time to read all the books she had brought along than she was ever likely to have at home, where water ran into the sink, either hot or cold, and ran out with no effort at all.

THEY had fresh fish that they caught in the bay and in the fresh water lakes farther inland. Daddy said that if ever they stayed here till fall they could have all they wanted of rabbits, wild duck, wild turkey and other game. "How easily man can live in the open," he said one night as they sat outdoors enjoying the cool breeze from the bay. "His requirements after all are so simple! A few necessities—shelter, fire and good water. Given those, and a fair amount of energy, he can keep himself going any place. I'm not sure I wouldn't reduce his necessities to one, and that would be the good water. My greatest anxiety about this place was relieved when I found such an excellent well. With the inlet here just a shade too salty for drinking and no streams for miles around, that's an absolute necessity. The few 'comforts of home' which we'll want as time goes on, we can acquire gradually. Shall we keep the place?"

Everybody fell to acclaiming it at once, saying how they liked the beach and the boating; what they must add next year, and what friends they would have visit them there. Aunt Grace and Uncle Harry declared their little cabin suited them perfectly. "We feel just like Goldilocks," Uncle Harry said. "We've found the place that's 'just exactly right' for us, and we're going to stay in it."

George said little, hoping nobody would discover a certain little cave in the rocks that he knew about, and a high tree where owls had their home, and another place where he had once come face to face with a lovely brown deer. He went there often and waited quietly for a long while and hoped that some day he would meet the deer again. He found open spaces, where only pine needles made a soft carpet over the ground, where he could walk on his hands as long as he pleased. He found low branches where he could chin himself and swing by his knees to his heart's content. In those places he was very, very happy; nobody came along to tickle him and make him double up, or to say, "Jiggs and his trick!" He practiced endlessly for form and endurance.

(To be concluded)

New Books on Health

NEW MINDS FOR OLD

By Esmé Wingfield-Stratford, D.Sc., M.A. Price, $3. Pp. 452. New York: The Macmillan Company, 1935.

A LIFE PHILOSOPHY, honestly thought through and stated with conviction, forms the framework of this book. The author sets himself the task of answering the question, "How can I train my mind and will to the task of getting the best that life has to offer?"

By proper mind training in the art of living, man can come properly alive. "Fasci-bolshevism, to coin a word badly needed—imposing its team spirit on a community of mental slaves, tired and puzzled with the show of a freedom contrary to their instincts, and joyfully flocking to the service of any tyrant who will take from their minds the burden of thought and from their souls the incubus of conscience—such is the goal to which not only the practice but the thought and philosophy of the age are tending; such the spirit before which mightiest nations are swept, one after the other as helplessly as leaves before the autumn gales."

The power and the desire to think independently and creatively are precious heritages which have too long been denied. "The first-rate mind," says the author, "does not put itself into the power of any person or system." The various cults and "isms," false prophets of happiness and content, which have successively engrossed the attention of man and have offered palliative prospects, sometimes at the cost of health and even life itself, are put under searching scrutiny. An impartial evaluation, accented by a scholarly breadth of vision and a wide acquaintance with world literature and history, leads the author to the conclusion that there is no formula that will serve us in place of the creative imagination that is the key to all living mysteries. The choice before us is "to go forward, by mind training, to a world of men, freely commanding their destinies, and realizing their capacities to the uttermost, or to sink back, through inertia and mediocrity to a slavery whose wages are death for the soul, failure for the individual and, not improbably, extinction for the species."

For the average reader this book will probably contain an embarrassment of riches. There is meat in it for several volumes. For proper assimilation it must be taken slowly and in small portions.

LEOLA J. HARRIS.

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

20TH CENTURY PSYCHIATRY

By William A. White, M.D., A.M., Sc.D. Cloth. Price, $2. Pp. 198. New York: W. W. Norton & Co., Inc., 1936.

THE WHOLE work is based on the organismic theory that has been making such great progress in scientific fields in recent years. Psychiatry has made it evident "that the relationship between patient and physician constitutes the most important tool of therapy." Body and mind should not be looked on as two separate entities but as an organism in which processes and relations may be of more importance than either alone. Since none of the elements of this organism or the relations between its parts is fixed, a dynamic rather than static view is essential to understanding. Directions of movement in any of these elements are of great importance. Body plus mind equals a human personality.

Attention to the social significance of mental diseases has been increased by the discovery that in some states one person in every twenty will become afflicted with a mental disease at some time during his life. The apparent recent increase is in part due to better diagnosis and treatment, bringing under consideration many persons not previously regarded as mentally ill. Mental disease is essentially "the expression of the conflict of the individual with the cultural pattern as it exists objectively in his social milieu." Treatment of certain types of mental disease is a problem of readjustment in which the environment and the individual must be considered from the organic and the dynamic point of view.

Behavior patterns seem to be created for some purpose, at least in the mind of the possessor. A knowledge of this purpose is often the key to the stresses and relations that must be relieved. These relations again exist as elements of an organism that can be understood only as a whole. Classification of functional and organic, for example, is primarily of value as an aid in discovering their relations. To better express this organic view it is suggested that a wider use of hyphenated terms like "mind-body" would promote clearer thinking. The work as a whole is filled with thought arousing suggestions in many fields besides medicine.

A. M. SIMONS.

EMPLOYED WOMEN UNDER N. R. A. CODES

By Mary Elizabeth Pidgeon. Price, 20 cents. Pp. 144. Washington, D. C.: United States Department of Labor, Women's Bureau. Bulletin No. 130, 1935.

THIS report considers the code provisions and compares them with previous situations in industry. It is of general interest to the physician in that it deals with the hours of employment, wages and overtime allowances. Only those industries dealing mainly with the employment of women are discussed.

P. A. TESCHNER, M.D.

SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

Am I Helping My Pupils to Overcome Their Fears?

THE EIGHTH OF A SERIES OF EDITORIALS ON THE MENTAL HEALTH OF CHILDREN

FEAR works havoc with its victims! How vividly I recall an experience when I was about 10 or 12 years old. It was on a sultry day in summer. While driving along a country road, we stopped at a farmhouse to get a drink of water. I started merrily along the path that led to the house, but when I was about halfway to my destination I heard a slight noise and, glancing around, to my horror I discovered the largest and ugliest bulldog that I had ever seen. I did not dare to turn back for fear I would be attacked, but still I was afraid to go forward and be followed. Amid the most conflicting impulses I decided to continue to the door. The bulldog followed, waiting patiently and suspiciously as I knocked. Getting no answer I finally mustered enough courage to turn around and march slowly past the huge animal to the carriage. The bulldog marched solemnly behind me as far as the gate where, still watching me, he settled down. I suddenly quickened my speed and hurled myself frantically into the carriage. Physically exhausted and mentally upset, I never got completely over my fear, and for many years the sight of every bulldog recalled those few minutes of terror. Even today I have a marked aversion toward bulldogs. It is evident that some fears die a hard death.

THE investigations and experiments of psychologists and physiologists have shown that when fear attacks a man, he is completely enveloped by it. It has been explained on the ground that the adrenal glands pour their powerful secretions into the blood, thereby stimulating the liver to release sugar. Breathing becomes more rapid; the heart works harder, and the blood is forced into the muscles for action. Blood pressure and muscular tension become greater. Digestion is retarded. The body is set for action. The powerful emotion of fear leads to the exhaustion of mind and body. Although this theory is now questioned, there is no doubt that the symptoms are quite marked in acute cases of fear; they are also present in milder cases.

Biologically, fear has its place. Frequently it keeps us from running headlong into danger and acts as a safety device against foolhardy risks. There are many fears in life, however, that are petty and unnecessary. They make success impossible and deprive life of joy and zest. They constitute the heart of what we call a nervous breakdown. If we knew better how to handle fears we could prevent and overcome them in ourselves and the children whom we teach. Perhaps it is our job not only to teach mere facts but also to teach boys and girls to be good fighters and to face life with confidence.

AS PSYCHOLOGISTS and mental hygienists get a better understanding of this drab and gruesome world of fears they find that fears often grow out of helplessness and lack of success. Confidence has its roots deep in the soil of achievement. To dispel a fear, substitute success. Let us consider a typical case.

Alice, a 14 year old girl, did poorly in school. Every time the teacher called on her Alice answered "I don't know." The teacher could get nothing out of her. Finally in despair she requested that Alice's case be studied. She felt that either she was very dull or something was radically wrong with her.

Psychologic examinations showed that mentally Alice was above normal. Observation also showed that Alice was an overgrown, awkward, ungainly girl who had not made any friends. A study of her home conditions revealed that she was the youngest of a family of four and that her brothers and sisters were doing exceptionally well at college. The parents had made constant allusions to their success in order to challenge Alice to do her best. Fear of this adverse comparison and fear of ridicule had led Alice to a state where failure seemed inevitable.

HER state of mind expressed itself in a refusal to recite in class. "I can't do my homework because if I know my lesson my teacher will want me to recite," she said pathetically. This may be an extreme case of timidity, but for many pupils and even for older persons going to the front of the room is often no small task, and sometimes standing causes acute suffering.

The case of Alice yielded readily to treatment. As soon as the family understood the situation they ceased to make comparisons. They even began to comment favorably on her minor successes in school. Through the teacher's influence she was invited to join in the activities of one of the finest groups in the school. To overcome Alice's fear of reciting the teacher assigned some easy pieces of work on which she was to report to the class. They reviewed the report together until it was clear to Alice that she was well prepared and could not fail. For many weeks she knew what her assignment was, and therefore she did not have to fear ridicule. At the end of two months she was reciting with her class. Her mental health had been restored. Her attitudes toward her home, schoolmates, teacher and school had become wholesome. Fear had been vanquished!

TEACHERS FOR CONVALESCENT CHILDREN

EMMA GARY WALLACE
AUBURN, N. Y.

When a child is ill he may become seriously maladjusted. To prevent this, teachers in some of our school systems are being delegated to teach convalescent children in hospitals and homes. Is your school organized to help the convalescent child? What can you do personally for children who return to school after an illness?

MANY a child has fallen behind his classes and companions because of necessary absence from school on account of illness.

When a child loses step with those of his own age and interest group, he is liable to take a dislike to school and look forward to the time when he can leave the classroom altogether.

The period of convalescence will probably be a tiresome one for the average boy or girl, and often recovery is retarded by worry because the patient thinks his classmates are getting so far ahead of him that he will not be able to catch up.

In fact many a convalescent child is more worried than those around him realize, concerning what will happen when he returns to the classroom. Will he be "put back?" Will the others whose good opinion he values laugh at him because he is with those smaller than himself? Will the teacher look down on him for his lost time? Will his companions shove him to the edge of things on the playground because he isn't up to them in his studies?

Boys and girls are extremely sensitive to the opinions of their peers, and they want to stand well with their teachers. Illness and convalescence are obstacles which have long been stumbling blocks, and there seemed little to do about it in the great majority of cases.

Then came the time when special classroom work was arranged for children who were able to give only part of the regular school hours to study or children who were somewhat backward or subnormal. This was a start in the right direction, in places where it was possible to organize such departments of teaching service.

But recently a further step forward has been taken, and it is proving so successful that the other towns and cities which are watching the experiment doubtless will not be long in doing something of the same kind.

This interesting plan had its inception in Syracuse, N. Y., in January 1934. The project, for such it really was at the time, was to take the teacher to the bedside of the convalescent pupil.

The purpose of this, according to Dr. G. Carl Alverson, superintendent of Syracuse schools, was to give systematic and regular school instruction paralleling as closely as possible the regular studies the child would have if he were able to attend school in the usual manner.

The teaching given the convalescent child was to enable him to maintain his ordinary status in school. This bedside teaching or tutoring has an advantage over individual instruction and serves to consume tedious hours. It is an indisputable fact that when the mind is at rest and the child is happy, physical recovery is likely to be more rapid.

When the hospital-visiting tutors first began their work, some of the service rendered was volunteered by university students and others. So well did the plan work out that Donald M. Kidd, director of emergency adult education, devised a program for hospital-visiting teachers, providing training of just the right kind for that type of work.

For example, 11 year old Jane Dobie, a little orphan girl, entered the Syracuse Memorial Hospital, Aug. 10, 1935. She took her school books along with her, hoping that she could manage somehow or other to keep up with her class.

After five weeks, she was considered sufficiently recovered to have a teacher provided for her. One was sent by the Adult Education Department, and Jane delightedly began all her sixth grade subjects. Now, according to Miss Touhey, her teacher, the little girl is doing exceptionally good work.

Jane's time as far as her school work is concerned is divided into two parts. Either she is reciting and receiving instruction from her teacher, or she is preparing her lessons for the next day.

Jane also loves to read, and she reads books which Miss Touhey helps her select. In speaking of her little pupil, Miss Touhey says, "It is a pleasure to work with a pupil so eager and willing. Jane is a very industrious student, and I believe that she is easily keeping up with her class at Charles Andrews school."

Miss Touhey is giving similar instruction each day to nine other convalescent patients in hospitals. Their ages range from 5 to 15 years.

Naturally the length of time the boys and girls are able to study depends on age and condition, but this is a matter which can easily be arranged and adjusted as long as there is only one in the class.

There will doubtless be some who will reason that, while such a plan may be feasible for a town or city school, it would scarcely work out in smaller or rural communities. Although rural communities and smaller villages rarely have hospitals or convalescent institutions, towns and cities often do. In the latter a plan could be worked out for having teachers "on call" for the convalescent boys and girls.

The convalescent children in village homes and rural districts could, by employing a similar system, receive teachers at their bedsides in their own homes.

In the beginning, some of this work might have to be gratuitous on the part of the teacher or done at a very modest rate, but the work could probably come under the head of relief employment, with county or state supervision.

Juvenile delinquency has been traced in more than one instance to a gap in school life. Resentment is born in the heart of the boy or girl who finds himself rated with low marks at the time of the monthly or quarterly school tests or examinations, when through no fault of his own he has missed part of the work.

Naturally the pupil who does not make a good showing or is not able to be promoted with the rest thinks it unfair, for few will remember how much of the class work in his grades he has missed.

It is now well understood that many children are so constituted that, without realizing what they are doing or why, they undertake to compensate in some way for what they have missed. That is, they attempt to make up some sort

of a satisfaction which they feel will repay them for what they have lost otherwise.

Bad habits, mischievous activities and parental and teacher defiance all offer to them types of compensations and often lead to juvenile delinquency.

Statistically, it can be proved that the bedside or home teacher for the convalescent child is an economy to the school district or department of education, as she will prevent the need of large numbers of pupils repeating their grades and otherwise holding back the school program.

It has been accurately figured down to the fraction of a cent how much it costs to have children fall behind in school through such things as defective eyesight and malnutrition, thus requiring extra terms to pass out of their grades.

Illness is known to be expensive from many standpoints, and the loss in education must be reckoned with. The bedside teacher is therefore bound to prove herself a success and an economy rather than a needless expense.

One exception must in all fairness be mentioned, and that arises in the event of illness of a contagious character. In such cases, the safety of the pupils and community must, of course, be considered first.

THE PLAY LIFE OF THE TEACHER

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There are many books on the play of children but none on the play of teachers. A teacher presents here a sound and interesting philosophy of recreation. Without this the teacher cannot function at a high level, and so she would be disqualified to guide boys and girls in health education. Are you satisfied with your play life?

IT IS complimentary to the profession that teachers are generally considered the most conscientious of all professional workers. Exceptions there are, doubtless; but not many of them remain in the work for long. As one physician put it recently, speaking of teachers, "You take your work too seriously."

This taking of the work so seriously frequently means that teachers fail to keep their own health positive. Either they take no recreation, or else they take the kind that has little restorative or recreational value. In short, either they do not know how to play, or else

they stop playing. This cessation of the play life may come about gradually; that is, the teacher leaves off this walk, that tennis game and the like, until she finds herself without relaxation.

Teachers have a tendency to suffer from "nerves." For this, there is no remedy equal to play. It is nature's way to loosen the tension; it is the one spring tonic that works. Physicians tell us we rely too much on medicine. We dose ourselves on pain killers, thinking the pain "is needless suffering," whereas it is warning that something is wrong. We get a cold in the fall and go through the winter coughing and wondering why "Whoozit's Cough Syrup" doesn't cure us. It is a fine thing to watch the health of the children entrusted to our care, but it is equally fine to watch our own health.

Among the prerequisites of a good English teacher, we are told, are a dog and a garden. There is no reason why the dog and the garden should not be equally good for the teacher of the first grade and for the mathematics teacher in high school. Obviously, not all teachers can have either the dog or the garden. But the idea is there: play, getting out of doors just for the fun of it; watching things grow; living close to and with nature.

By the very nature of their work, teachers become dehumanized more quickly than do lawyers and doctors. To prevent this disaster from overtaking them, they should make sure that they associate with persons of other occupations. Talking shop is neither pedagogically sound nor health giving.

A night at the movies may be a release and a relief for Miss Jones but not for Miss Brown. There are individual differences in recreational desires equal to those in other fields. A teacher said to me recently that he kept a dog last year to prevent his working on Saturday. Instead of going out to the school he took his dog, invited two or three of the boys to go along, and went for long hikes and just watched the dog hunt and play.

An official of a school said to me, "That Miss Schuyler you sent us might have been a good teacher if she had not been such a good dancer." Dancing can be wholesome recreation, but if indulged in too frequently and for too long periods at a time it will certainly unfit a teacher for her real task. What is more, it will sap her energies rather than restore her vitality. It may be "just loads of fun" for the young teacher just out of college, teaching her first school, but she should control the temptation.

Mathematically, the ideal life is eight hours of sleep, eight hours of work and eight hours of play. We swerve from the ideal at our own risk. The conscientious teacher will doubtless find that she will not be able to do all her work in eight hours. Then under pressure she attempts a summer in some college or university and puts in even more time. The strain is great. Sooner or later there must be a let-down or a change.

Some teachers have household duties at home. Many from necessity have to do their own laundry and even their own cooking. Do we wonder that teachers become cranky? Then educational science conveniently discovers that a teacher can teach forty or more pupils as well as she can teach half the number. But educational science has not yet shown what happens to the teacher who attempts it.

Unless teachers protect themselves against their own work they will wear out, or at least lose their usefulness as teachers. There are always others ready to take their places. In industry it is known that it is cheaper to protect a trained workman than it is to wear him out and get a new one. We haven't learned that in education. I believe all teachers have a right to protect themselves. They have a right to a certain amount of play life. The community often expects much outside work from the teacher. Again there is a limit. As a part of his contract for a certain Nebraska school, a young man agreed to teach a Sunday school class every Sunday. I suspect during his stay in the community he heard the minister preach a sermon on Sabbath observance. But teachers are public servants; even their souls are often mortgaged.

Every person should learn in early life some outdoor game that he can play all his life. As a people we are not much given to play. We think of play as belonging to childhood and not to adulthood. Moreover, some still retain the Puritan notion that it is sinful. But unless we learn to play we shall lose our ability to relax; and if we lose that ability we shall age in our profession prematurely, become "cross old maids" or their male counterparts.

Finally, the teacher owes it not alone to herself but to the children she teaches to keep in positive health. The teacher's cheerfulness reflects a wholesome attitude into the schoolroom. The "little imps" she tries to teach will not be nearly so troublesome if she feels well; that is, if she is not merely free from disease but has positive health. The pain killer addict is going to forget her pills some day, and the children will know about it.

Eight hours of sleep; eight hours of work; eight hours of play. If a teacher can't play, and there are some who seemingly cannot, either she should learn how to play, or she should change her occupation. She is living constantly with life that is mostly play. In the primary grades she uses the play way to teach. If she herself cannot play she is going to be unsympathetic with the play of her children and find that the play way of teaching becomes boresome.

To Contributors: — *The editor of the School and Health Department will be pleased to receive articles dealing with the solution of concrete and practical health education problems in the school. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

LIVING HEALTH IN AN OPEN WINDOW ROOM

EDWARD L. MEIER
KEWANEE, ILL.

A school is a miniature society with its individual and social problems. The best kind of health education is training in healthful living. This article describes the activities of a group of children engaged in recovering their health.

THAT which is worth having—be it health, wealth or love—is worth earning!

Such is the philosophy of Miss Emma Callihan, instructor for the past seven years in the Lyle school open window room. In keeping with her philosophy she gives her pupils opportunities to assist in regaining the good health which has been denied them.

"Permit the children in rest and nutrition rooms to work their way back to good health, and they will appreciate it more than if they are nursed along like so many invalids. Moreover, they will know from actual experience some of the precautions which must be taken to keep in good health," she says.

Children do such work gladly, Miss Callihan finds, and will come to enjoy it to the extent that they will actually ask for the privilege of doing the little tasks which she assigns.

Such a situation is indeed a healthy one, and unquestionably the pupils will benefit more from a program in which they are co-workers than from a program in which they are mere watchers.

The program offered at the Lyle school open window room is essentially the same as is offered in other rest and nutrition rooms throughout the country: balanced luncheons, rest, milk and fresh air.

In such a program there are numerous small duties and responsibilities which may be assigned to pupils, none of which will tax the strength of the child but rather will serve to stimulate and maintain his interest and insure his cooperation.

The best way to show how pupils can take an active part in a health program is to go through the daily routine of the class at Lyle school, pointing out those duties which may be assigned to them.

The first ten minutes of the school day is devoted to talks and demonstrations on good health and the benefits to be derived. Most of these are given by the instructor, but she permits and encourages pupils with interesting health stories to relate them to the class.

At 10 a. m. each child goes to the kitchen, where he receives a half pint of milk, which he carries back to his seat and drinks. The first duty of the day is the collection of the empty milk bottles. One of the pupils, according to his turn, goes up and down the aisles with a box in which bottles and straws are deposited.

A fifteen minute recess, during which the students play outdoors the same as the other children in the school, comes at 10:45. This is the only scheduled play period during the day, but in cases of malnutrition it is neither necessary nor desirable that children be as active as others in the school.

Luncheon is served at noon, and it is in this phase of the program that Miss Callihan finds the most opportunities for permitting children to assist and for instructing them in home tasks which they should but sometimes do not know how to perform.

In assigning this noon hour work, Miss Callihan uses a rotating system so that each student is accorded an equal opportunity to participate and benefit.

Luncheon hour duties are performed by two pupils who are excused from class ten minutes before noon. After washing their hands, they return to arrange the dinner tables. This involves moving the tables to their mealtime positions in the room, washing and drying them, placing chairs, napkins, silverware and glasses and finally serving plates of food prepared in the kitchen.

Second servings are given, if desired, and it is the duty of those who prepare the table to serve the others.

When all have finished eating, each carries his plate, silverware, glass and side dishes to the kitchen. Dishes are washed by the school cook but are dried and placed in cupboards by children, working two at a time according to turns.

Duties which follow the luncheon entail washing and drying tables, moving them to the wall, folding the chairs and placing them in the cloak room, and finally sweeping the floor. These duties are performed by a third set of two pupils.

Though second servings, as generous as the first servings, are given, the cost per pupil for each meal averages only 7½ cents. This

THE OPEN WINDOW ROOM HEALTH PROGRAM STRESSES REST AS AN IMPORTANT FACTOR IN IMPROVING THE CHILDREN'S HEALTH. THE APPROVED COSTUME IS SHOWN ABOVE.

low average is secured through personal purchase of food supplies by Miss Callihan and Miss Kuster, the cook, with full advantage being taken of any special sales conducted by grocers.

In planning meals an effort is made to avoid serving any certain day's menu more than once a month unless it happens to be a favorite with the children and they request it.

Here is a week's menu:

Monday.—Creamed dried beef, baked potatoes, cabbage slaw with diced beets, bread and butter sandwiches, orange and banana salad.

Tuesday.—Meat and vegetable pie, combination fruit salad on shredded lettuce, bread and butter sandwiches, up-side-down cake.

Wednesday.—Vegetable soup, crackers, bread and butter sandwiches, tapioca with crushed pineapple.

Thursday.—Pork and beans, corn bread, Waldorf salad, bread and butter sandwiches, ginger creams, cocoa.

Friday.—Macaroni and tomatoes, golden glow salad, bread and butter sandwiches, chocolate bread pudding.

At the table a home atmosphere is obtained by encouraging pupils to talk freely with others about any subject that interests them. Movies form one of the most popular topics for conversation, Miss Callihan says, and adds that she invariably learns from table conversation the good and bad features of a picture being shown in the city and can thereby judge whether it is worth seeing.

This light atmosphere, in contrast to that which prevails in the majority of the pupils' homes where parents are usually depressed because of financial troubles, is undoubtedly the principal reason for the intensity with which pupils desire to attend school.

Every one, regardless of age, enjoys and seeks companionship which is free from sorrow, disappointment and unhappiness. Thus, by light and free conversation, this desire is realized, and the room becomes a haven for students.

The fact that pupils are not only anxious but determined to take part in the work is clearly evidenced by the case of a lame boy. Miss Callihan felt that walking to and from the kitchen might prove a hardship for him and that he would feel his affliction was being flaunted before his more nimble classmates, so she excused him from the work.

Did he resign himself to watching others do their tasks and never take part himself? No, indeed! He demanded with such earnestness that he be permitted to do his share, it was impossible to refuse him without creating in him an inferiority complex that would be more detrimental than the walking could possibly be.

Though he can carry only one plate at a time if he is to avoid spilling, the situation takes care of itself since another pupil will step up to assist him after he has made two or three trips to and from the kitchen. He does not resent this assistance, understanding that it would take too long to serve the table by himself. All he asks is that he be permitted to help.

At 1:30 o'clock the pupils retire to the sleeping room for an hour nap. To promote relaxation a deep breathing exercise is conducted before they lie down and, as in the other work, pupils take turns in leading the class in the exercise.

Each student, at the start of the school year, is assigned equipment for his use throughout the school year. This equipment includes an army cot, wool blankets, and a uniform of the approved type used in rest and nutrition rooms throughout the country.

It is the duty of each student to keep his cot brushed, his blankets folded when not in use and his uniform on a hanger in the closet when not being worn.

On returning to the class from the rest period, each again receives a half pint of milk. The same routine is followed as in the morning.

The eagerness of pupils to attend school is clearly shown by the fact that the majority walk long distances to and from the building each day. One girl walks more than a mile each way in all kinds of weather and has been neither tardy nor absent all year.

During the seven years that the room has been in operation the average annual gain per pupil has been 10 pounds, and a record has been established of every pupil leaving the room at the end of the year with improved health and as a better student because of his improved condition.

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Are Voluntary Muscles Innervated From the Sympathetic Nervous System?

To the Editor:—In a book published in 1926, it is stated that it had recently been claimed that voluntary muscles are innervated from the sympathetic nervous system. Is there anything in the present knowledge of anatomy and physiology to substantiate this claim?

J. M. S., Iowa.

Answer.—Whether skeletal or voluntary muscle is innervated, and its function directly influenced by the sympathetic nervous system is a controversial question among anatomists and physiologists. The former agree that sympathetic nerves are found in skeletal muscle. Some anatomists claim that they can trace sympathetic nerves to individual voluntary muscle fibers; others state that they are unable to do this and believe that the sympathetic nerves which are found among the muscle fibers supply the involuntary muscle of the blood vessels in the muscle. Physiologists agree that stimulation of the sympathetic nerves going to a muscle does not cause the muscle to contract; they also agree that the sympathetic nerves influence the function of skeletal muscle; but how they influence the muscle is controversial.

Some supply evidence indicating that sympathetic nerve impulses directly influence the metabolism of the individual muscle fibers, so as to delay the onset of fatigue and to increase or decrease the irritability of the muscle; others believe that sympathetic nerves influence the functional activity of skeletal muscle only indirectly by causing changes in the blood vessels and thus the blood supply of the muscle. It appears that muscle tone is directly or indirectly (blood supply) influenced by sympathetic nerves. At one time it was thought that certain types of spasticity of skeletal muscle (disease) was due to the sympathetic nerves. This now appears to be untenable. The question has not been settled because methods entirely free from objection have not been discovered.

Brain—Function of Right Frontal Lobe

To the Editor:—Are the speech centers located on the left side of the brain? Do brain physiologists know to what purpose, in the economy of nature, the corresponding right side area is devoted?

D. S., California.

Answer.—The speech center is located over a rather wide area on the left side of the brain in right-handed individuals. The question, however, probably refers to the right frontal lobe. Three functions may be named for this division of the brain: 1. In the back part of this lobe along the central fissure of the brain are the nerve cells which control the voluntary muscles on the left side of the body. There is probably some control of muscles on the same side, but it is much less in amount. 2. In such animals as the cat and dog, and possibly man, the right frontal lobe receives some of the general body sensations, particularly those which come from the muscles, tendons and joints. These aid the motor cells just mentioned in controlling movement. 3. The right frontal lobe in common with the left has something to do with consciousness, memory and judgment. Often when, as a result of brain tumors, these parts have been removed in man, no serious defects could be noted. Careful study of the individual, however, has usually shown a lack of restraint, poorer memory and a certain amount of indifference and inattention together with a certain lack of power to concentrate. All these functions exist in other parts of the brain as well, so the defects are not complete.

Use of Dictaphone in Relation to Deafness

To the Editor:—I have recently been working on a dictaphone transcribing machine but have been told by several persons that if used constantly it will in time make me deaf. Is this true?

C. F., New York.

Answer.—So far as is known no detailed scientific tests have been made concerning the effect of the use of the dictaphone on the hearing. Several years ago when an internationally known acoustic expert was approached on the subject he confined his reply to the investigations regarding the telephone. He stated that he had been asked whether constant use of the telephone impairs the hearing and said that tests which had been made to determine this had been negative. "As you know, a very large majority of the people using telephones use the left ear. An examination of thousands of audiograms has revealed no consistent difference in the hearing of the right and left ears. This would seem to indicate that no impairment is produced by using the telephone."

An organization for the blind when asked whether the use of the dictaphone is liable to injure the typist's hearing stated that although the question had been raised before, no factual conclusions had been reached. A number of placement agents were consulted, but their opinions differed. One or two who had placed blind operators had a distinct impression that the constant use of the dictaphone would impair the worker's hearing. Two or three others said that they had not had any complaints. It was believed that if the dictaphone is injurious the fact would show up especially clearly with the blind operators since they listen steadily all day, whereas the usual dictaphone operator varies her transcription with filing and other types of office work.

The American Society for the Hard of Hearing would not advise a hard of hearing person to use the dictaphone.

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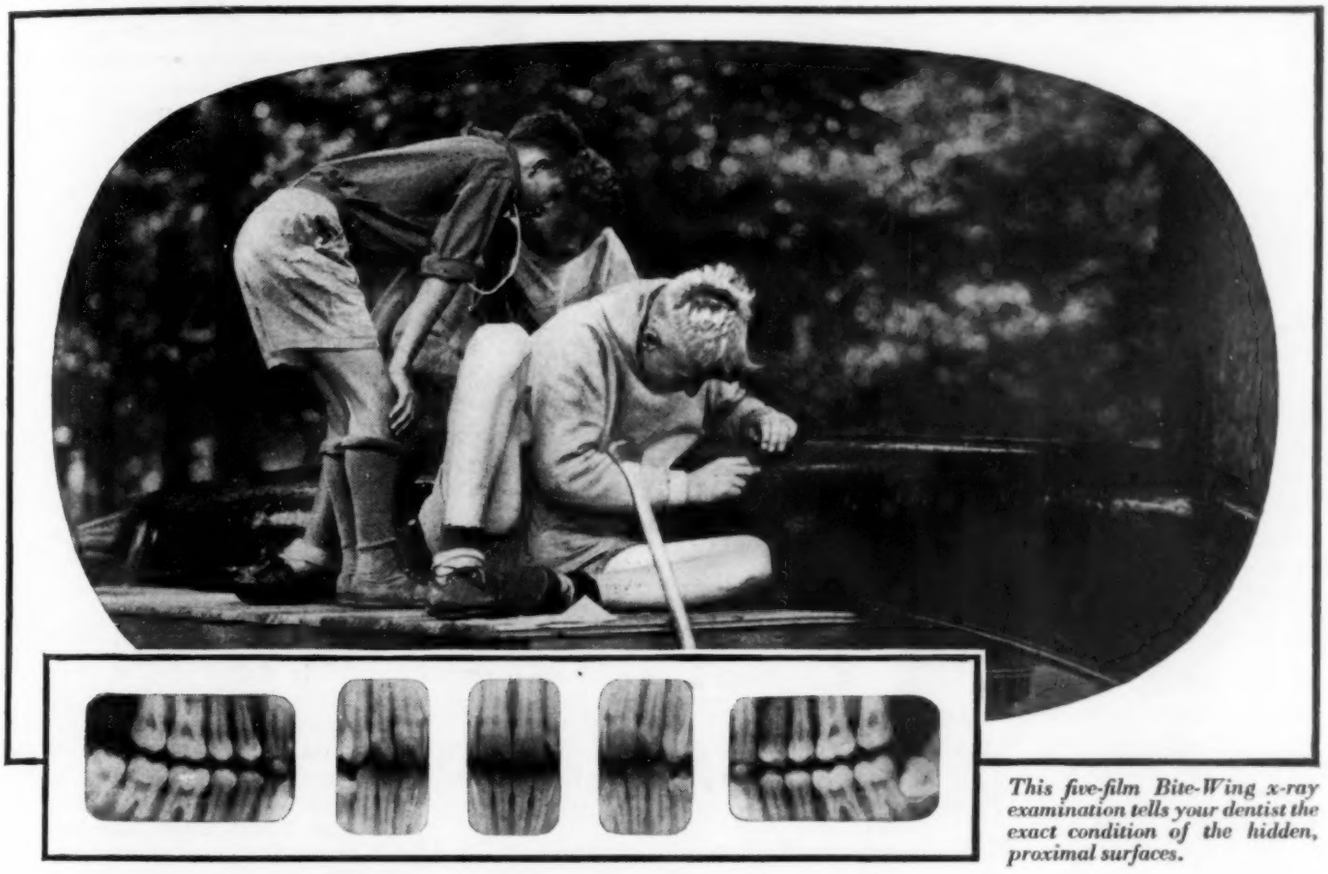

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Ears should be examined after recovery from an attack of any infectious disease.

Schools equipped with an acceptable type of the phonograph audiometer possess an aid of great value in the early discovery of deafness in children.

There are scientifically constructed instruments that assist hearing; but before selecting one of them, a deaf person should consult an ear specialist. Some people are sensitive and hesitate to use these aids to hearing. No one should feel more sensitive about using a hearing aid than about wearing eyeglasses.

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QUESTIONS AND ANSWERS

Eye Exercises for Strabismus

To the Editor:—My son is to be operated on for strabismus. The surgeon who is to perform the operation condemns the occlusion method of treatment but is strongly in favor of the operative procedure. He explains that a tuck is taken in the eye muscle. He will operate on the left eye, and sometime later it may also be necessary to operate on the right eye. In the meantime he recommended the use of a stereopticon machine or apparatus for a half hour's exercise each day. The apparatus is a pyramid-shaped wood container into which eye goggles are fitted. A prism glass is fitted over the regular glass, and a septum acts as separator between the right and left sides; various object slides are used. The aim of the machine seems to be to teach the idea of focusing. The construction and materials used in the apparatus seem of the cheapest, certainly not worth more than $2. Yet the sale price is $12 plus $2 for a prism and $3 for a light attachment. I don't think the machine is all that it is claimed to be, and I do think the price excessive. It seems to me the child is doing similar exercises in his daily life when he directs his gaze to any object or person. Do you believe these stereopticon apparatus are of any value in correcting the eye? The company claims there are actual cases in which exercise with their machine has succeeded in straightening crossed eyes.

R. E., Brooklyn, N. Y.

Answer.—If the boy has an alternating strabismus, occlusion methods of treatment will not be of any value. The institution of orthoptic exercises before operation is the proper procedure for the purpose of inducing binocular vision and fusion, if possible. The apparatus may be exorbitant in price, and furthermore, the manufacturers of the apparatus seem to claim more than their apparatus will substantiate. In addition, the use of orthoptic exercises should be supervised at frequent intervals, for the doctor should determine whether progress is being made and whether more difficult test cards should be employed. As to the time and type of surgery, that is something for the doctor to decide; and his decision will depend on the conditions of the individual case.

Rubber Cement Poisoning

To the Editor:—Is rubber cement injurious to health? I suffer with continual backaches, and it has been suggested that they may be caused by the use of rubber cement.

P. P. K., District of Columbia.

Answer.—A number of authentic cases of benzol poisoning have been traced to rubber cement as the source of exposure. Most of these cases go back for their causal exposures more than a decade. Recent analyses of rubber cements have failed to disclose more than 5 per cent of benzol in the samples tested, and none in some. More often at the present time the solvents for rubber are special fractions of petroleum distillates. It is not an easy matter to determine whether benzol is a constituent of rubber cement, since fractional distillation commonly is required. It is somewhat easier to establish, however, that an exposed person is sensitive to benzol vapors.

Two tests are fairly reliable. When the white blood corpuscles are counted in a normal person, the range is from approximately 6,000 cells per cubic millimeter of blood up to approximately 10,000. However, in cases of chronic benzol poisoning the number of white cells in the blood is almost invariably reduced to such numbers as four or five thousand, and much lower in severe cases. A second test is described in a paper published in the *Journal of Industrial Hygiene and Toxicology* for January 1936.

While backache might arise as one of a series of manifestations of benzol poisoning, it is unlikely to appear as the sole or chief manifestation. More attention possibly should be paid to splotches of hemorrhage under the skin resembling bruised areas, slight burning at the time of urination, increased susceptibility to ordinary infection, and gastro-intestinal upsets. From the information in hand benzol poisoning seems unlikely, although the possibility of its arising in this manner is not denied.

Many old people, past seventy and eighty, still have all their teeth in good condition. Experiments on animals indicate that diet has much to do with keeping teeth from decaying. Lime, phosphorus and vitamin D are needed. Lime is provided by milk, cheese, leafy vegetables and egg yolk, meat and whole grains. Vitamin D may be found in butter, egg yolk, liver, green vegetables and cod liver oil. —*California Dept. of Public Health.*

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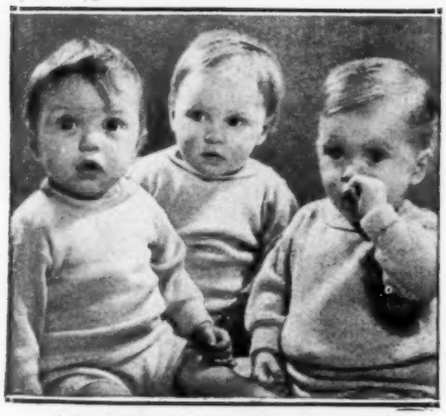

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Cancer of the Eye

To the Editor:—On Dec. 7, 1934, I gave birth to a 7½ pound baby boy who appeared to be perfectly normal. When he was about 8 days old, I noticed that the left eye was slightly larger than the right and that there was a clear dot in the center where the sight ought to be. It grew larger and larger until now there is hardly any brown in the eye at all, only this clear crystal looking part and the usual white. The boy is now 1 year old, and I have had him to three eye specialists and a quack. Each gives a different diagnosis. The eyeball is as hard as a marble. One doctor says it is glaucoma, that the child doesn't see at all out of the eye and that he was born that way. Another says it is a congenital cataract and can be removed when the child is older. Another says he was born with cancer and that the eyeball must be removed at once or his brain will be affected and death will be sudden. The quack says it is either a liquid cataract which can be drained with a slight chance of the baby getting his sight or that it is what is called a globe-eye and is a prenatal mark of some electric light, and that the baby sees with it at night as a cat does. We can't determine whether he sees out of it by closing the right one, for the reaction is the same when the act is reversed; but he can see, for he reaches for objects when both eyes are open. One doctor said that the eyeball would soon grow so large that the lid can't cover it. This seems to be true. It really grows fast and changes appearance. Sometimes there seem to be bloody streaks through the white, and clots of blood form down in the crystal part. I should like to know whether it is possible for a baby to be born with cancer or glaucoma. Will it affect the other eye? Can the growth of the eyeball be halted? Can his eyeball be taken out now without killing him? Isn't he too young for ether or any other deadening medicine? If the eyeball is successfully removed, won't that side of his face shrivel up? Won't he be disfigured for life? Are glass eyes made for babies, and at what price? Wouldn't the glass eye have to be changed as the baby grew older? Will his eyeball grow so big that the lid won't cover it? Why was the child born with one hard eyeball?

Mrs. A. D. M., Florida.

Answer.—It is possible for a baby to be born with a cancer, and a cancer of the eye will often cause glaucoma, or hard eyeball. This kind of cancer is different from the kinds that are seen in old people. Generally the cancer, or tumor, starts when the eye is being formed and grows at first very slowly. Sometimes it can be seen soon after birth. More often, it is not seen until the child is 2 or 3 years old; sometimes not until he is 6 or 8 years old. This kind of tumor, or cancer, is called retinoblastoma, or glioma of the retina. If not removed soon enough, it will spread to the brain and other parts of the body and always cause death. It sometimes affects both eyes, and then both eyes must be removed to save the child's life. If both are removed the child will be blind, but he is likely to be happy, as most blind people are. If the cancer is removed soon enough, in one eye or both it does not return. Like most cancers, this kind causes no pain at first. However, almost all cancers of this type become painful if allowed to run their course.

The growth of the eyeball cannot be halted while the cancer is in it.

The eyeball can be taken out without killing the child. Death will result if it is left in.

No child is too young to be given ether if care is used in giving it.

If the eyeball is successfully removed there will not be any shriveling of the face. In a very young child, the bones around the socket of an eye that has been removed do not grow so fast or so large as around the healthy eye that has been left in; but the difference is not so great that many people can notice it when the child has grown up.

There will not be so much disfigurement as that caused by a bad burn on the cheek.

Glass eyes are made for babies at about the same prices as for grown people.

The glass eye would probably have to be changed when the child is nearly grown.

If the diseased eye is not removed it may grow half as large as the child's head before death occurs.

The causes of retinoblastoma are not known.

HOUSEHOLD TRAGEDY

Worn insulation
Hesitation
Conflagration
Consternation

—*Safety Education.*

BOOK REVIEWS

(Continued from page 749.)

THE NORMAL DIET AND HEALTHFUL LIVING

By W. D. Sansum, M.D., R. A. Hare, M.D., and Ruth Bowden, M.D. Price, $2. Pp. 243. New York: The Macmillan Company, 1936.

DR. SANSUM and his associates have produced a readable book which gives about as much information as can be crowded into 243 pages. The only serious criticism that might be leveled at the book is that the scope of the work is so large that it is impossible to treat any one part of the subject adequately.

Perhaps the first essential in a book designed for the education of laymen is that it should not contain misinformation or much discussion of matters which are still debated by physicians. However, this book seems sound. Only occasionally a statement is found that should call for some modifying phrases; for instance, it might have been well to mention the fact that many children cannot handle comfortably "a quart of milk a day." The statement given might lead a conscientious mother to feel that she just must get that quart into Junior no matter what happens. There is evidence to indicate that such overdosage of one food sometimes brings about a troublesome sensitization.

Perhaps particularly creditable to Dr. Sansum is the fact that in this book he has not ridden his hobby of regulating the acid-base intake of the body. The book can be recommended to intelligent laymen. There are a number of useful tables at the end.

W. C. ALVAREZ, M.D.

MENTAL HYGIENE

By Lorin A. Thompson, Ph.D. Paper. Price, 30 cents. Columbus, Ohio: School and College Service, 1935.

ONE OF the greatest aims of education should be that of self management, but unfortunately it is much neglected in our schools. The need of such instruction has led Dr. Thompson, a trained psychologist and clinician, to prepare this readable guide to better self understanding for boys and girls of high school age. It offers students of the adolescent period an opportunity to understand their personal problems better. There is a rating scale which will be helpful in self study. Suggestions as to the method of solving personal problems are clear and practical. Teachers of hygiene will find this a helpful supplementary text. It is suggested by the publishers that it may also be used effectively by teachers of English and of social science.

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THE ANATOMY OF PERSONALITY

By Clement C. Fry, M.D., and Howard W. Haggard, M.D. Price, $3. Pp. 357. New York: Harper & Brothers, 1936.

MANY books on personality and mental hygiene have appeared within recent years, but one of the most original is this volume written by two well known professors of Yale University. This is not the type of book that enumerates the principles that must guide one and the habits that one must form to be mentally healthy, but it does present, shorn of the technicalities of psychiatry, a structural analysis of personality. Although frequent reference is made to abnormal psychology the authors are interested in the normal individual. The personality of the average man has the same structural constituents as that in the most extreme psychopathic case. The distinction between the abnormal and the normal, according to the authors, is only one of degree. Readers will especially enjoy the unique illustrations of this book.

J. MACE ANDRESS.

CARING FOR THE SICK IN THE HOME

Pp. 30. Boston: John Hancock Mutual Life Insurance Company, 1935.

ALTHOUGH there is a growing tendency to send patients with serious ailments to hospitals for expert treatment and care there are still many patients who must be nursed at home. Then there are thousands of patients who have an illness of slight duration who must depend on home care. To all those who wish to learn the fundamentals about home care of the sick this booklet is highly recommended. It cannot take the place of a doctor or trained nurse, but it does offer many valuable suggestions as to how those in the home may cooperate with them to the best advantage.

J. MACE ANDRESS.

COURSE OF STUDY FOR ELEMENTARY SCHOOLS

GRADES 1 TO 8. Pp. 296. State of Wyoming Department of Education, 1935.

THIS is an exceptionally good state course of study. It provides enough content to be of genuine help to the teacher. Not only does it outline the instruction to be given, but it contains many suggestions on things for children to do. There are excellent bibliographies. The aims in teaching hygiene in all the grades from the first to the eighth are clearly stated, and methods of achieving results are clearly indicated. The course of study seems to grow naturally out of the needs of school children in Wyoming.

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PERSONALITY MALADJUSTMENTS AND MENTAL HYGIENE

By J. E. Wallace Wallin. Price, $3. Pp. 511. New York: McGraw-Hill Book Company, 1935.

THE STUDY of maladjustments not only reveals important facts about the working of the abnormal mind but also suggests what steps may be taken to relieve and prevent maladjustments. Dr. Wallin, a clinical psychologist, approaches the problems of mental hygiene with a background of case work including over 13,000 examinations of children and youth who have been subject to all kinds of handicaps and difficulties. It shows the work of many years.

In the first chapter, Dr. Wallin quotes with approval the definition of mental hygiene prepared by the New York State Health Commission: "Mental hygiene is directed to developing personality to its greatest possibilities, so that every individual gives his best to the world and knows the deep satisfaction of a life richly and fully lived."

The chapters that follow consider different aspects of maladjustment. Interesting case studies are scattered through the text. In the light of such case studies the author offers many constructive suggestions.

The book shows careful editing and writing, and is to be recommended to all those who wish to gain a better insight into mental hygiene.

J. Mace Andress.

RHYTHM BOOK

A Manual for Teachers of Children. By Elizabeth Waterman. Price, $3.60. Pp. 150. Illustrated. New York: A. S. Barnes & Co., 1936.

UNTIL recent years the word "rhythm" brought to mind only music and those arts directly dependent on music for their expression. Gradually the meaning of rhythm has grown to include other forms of expression less closely related to music, yet all of them involving movement. It is from this relationship between rhythmic movement and rhythmic expression in art forms that the author derives her material. Children, from the preschool age through the elementary grades, are living in a world of new and seemingly unrelated experiences, and they need to form these into a pattern on which all forms of their artistic expression may be based. The author presents a carefully organized plan of training which leads the children from the perception of rhythm in their own body motions, such as in the simple actions of walking, running and jumping, through the pattern making of these movements to the expressions of the rhythm in music, drawing and modeling. "The young child is in a survey stage of investigation and should not be led rapidly into a dance expertness of rhythmic movement any more than he should be forced into expertness in music, painting, or sculpture. He has to experience first in rhythmic movement the basic elements of form which underlie all of these applications of rhythm." The book is charmingly illustrated by reproductions of the children's work, and it is also supplemented by musical accompaniments evolved especially for the rhythm patterns described in the text.

Frances G. Klan.

HEALTH AND HUMAN PROGRESS

By René Sand. Cloth. Price, $3. Pp. 278. New York: The Macmillan Company, 1936.

A VAST amount of material was assembled for this work. Vital statistics of every variety are quoted. Source references are numerous, but these should be examined before the figures are accepted, since little discrimination is attempted by the author. So much useful material deserves better treatment. The attempt at a synthesis of "Health and Human Progress" is a failure, and sociological jargon is overworked. Credit for preventive measures, sanitation and public health is assigned to every factor but the medical profession. "In America . . . the primary source . . . was philanthropy." There is a valuable compilation of statistics on class morbidity and mortality. The main thesis seems to be that poverty causes disease, but just as this appears proved we read: "Of the primary causes of poverty, the most constant is disease." It is a valuable book for a discriminating reader.

A. M. Simons.

LOBAR PNEUMONIA AND SERUM THERAPY

With Special Reference to Massachusetts Pneumonia Study. By Frederick T. Lord, M.D., and Roderick Heffron, M.D. Price, $1. Pp. 91. Illustrated. New York: The Commonwealth Fund, 1936.

STARTING with definition and etiology, pneumonia is thoroughly discussed with the primary object of urging the physician to make greater use of the serum therapy. The marginal guides are particularly helpful. Also of interest and value is the chapter on allergy and its relation to serum therapy.

P. A. Teschner, M.D.

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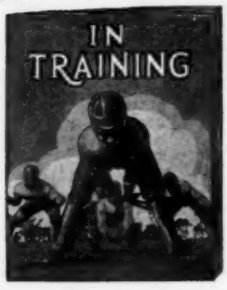

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THE "COMPATIBLE EATING" FAD

(Continued from page 686.)

tionally lucky your ulcer may heal as the result of the accidental use of nature's method; namely, alimentary rest.

Alimentary rest, properly supervised, is infinitely more important as a curative factor in alimentary disease than any other line of treatment. "Peristaltic fatigue" is a phrase which will be used more and more to describe an intestinal condition from which a great many people are suffering today as the result of following an overresidualized diet such as that recommended by the exponents of compatible eating.

Much of the irritability in your family or retinue of servants or office employees may be the result of an "irritable colon." You will find these words italicized in most medical textbooks. A former President of the American Medical Association, who is one of the leading nutritional experts in the country, says: "Irritable colon should be looked upon not as a disease entity, but rather as a fairly well defined symptom complex which may accompany any one of several abnormal states: a constitutional inadequacy of neuromuscular control, a fatigue neurosis, mild hyperthyroidism, overenthusiasm in the consumption of vegetables and other rough foods." Note the rather general conditions in which it is found. One well known English physician attributes most of the ills of the flesh to irritable colon, and he will not be far wrong in his surmise if the nonorthodox fad of compatible eating becomes general. If it does, it will be necessary to enlarge or build hundreds of new medical schools and hospitals, for the harvest of serious medical and surgical cases would soon swamp present medical facilities.

We all eat too much starch. We open a meal with a starchy soup and close it with a starchy or highly sweetened dessert. And between our spoon courses we pay overzealous attention to the farinaceous foods. The thick starchy soup is swallowed and not chewed, and consequently the starch enters the stomach before the salivary ptyalin can convert it into sugar. Starch reaching the stomach in a colloidal state absorbs the ferment, pepsin, which plays an important part in the digestions of the protein. In this way the pepsin may not be present in sufficient concentration with the stomach acid to digest the protein, thus delaying the digestion of meat. Slow eating and thorough mastication will never be outmoded as alimentary benefits. The physio-

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logic facts mentioned may explain the occasional benefits of the "nonmixing" food clan. They may also solve the frequent digestive turmoil in invalids and the toothless aged, who while living largely on puréed foods and thick soups fail to insalivate their food properly before swallowing it, because of its already finely comminuted state.

Many of the digestive symptoms of civilized people could be cured in one fell swoop if rich desserts could be permanently deleted from the average diet. They are eaten at a time when the stomach is already full and digestive felicity is assured. But not for long! An ounce or more of sugared daintiness is then eaten, and stomach turmoil is staged. Most desserts are made of starchy or highly sweetened foods and, though not harmful in themselves, they do wreak vengeance on an already loaded or overloaded digestive organ.

Be sure that you do not become one of the disillusioned followers of the few disgruntled medical backsliders and outsiders who try to crucify the entire medical profession by falsification and destructive criticism, and then by attempting to substitute a half baked philosophy and dietetic cure-all for scientific diagnoses and treatment. If you wish to sell your health heritage for a mess of "compatible" porridge do not drag your friends or family into this destructive maelstrom of nonindividualized dieting. And do not forget when weighing your evidence that a half million physicians and scientists cannot be wrong. To my knowledge no physiologist of repute subscribes to the biochemical principles of today's major diet fad of compatible eating.

The three words of advice which the wise old professor gave to his son who was just beginning his career as a research historian are: "Check your references." When taking up a new health idea or when enthralled with the philosophy of a neoteric health "prophet," "Check your references," and check his references, his education, the high and low lights of his career, the scientific soundness of his teachings and last but not least his professional standing. Science is unbiased. It tolerates neither jealousy nor prejudice where human welfare is at stake. It recognizes in fullest measure the compelling and incisive meaning of those lines inscribed in marble on the walls of the Harvard Medical School:

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FREE PAMPHLET

"HEALTHMOBILE" MAKES SUMMER TOURS OF INSPECTION

The "Healthmobile," under the auspices of the department of health of the state of Maryland, is currently making tours of inspection among the children of the state.

The "Special," fitted up like a hospital room with all the equipment usually found at a children's clinic, started on its rounds last May. It visits sections not ordinarily reached by the child health conferences held regularly throughout the year; and it will be used for informal health conferences with mothers about the needs of their children and for the examination of babies and young children.

The arrangements at each place are made by the county health officer. The staff of the Healthmobile includes a doctor who has had special training in the care of babies and young children, the public health nurse of the county visited and a dentist. A movie outfit is included in the equipment, and health movies are shown in the evenings.

The aim of the conferences is to show mothers how to keep their children well. No medical treatments are given. Children in need of medical care are referred to their own doctors. The conferences afford a special opportunity for examination of children who will reach school age this summer and for any necessary corrections before the children start to school in the autumn.

There are opportunities in life where a man gets entertainment by sitting passively and receiving impressions; he goes to the opera, perhaps, without informing himself beforehand about the music, the composer or the book; he goes to a motion picture show, sits and receives what comes; he listens to a lecture, without following it up afterwards with discussion; he goes on a journey, without first getting the history needed to understand the countries he is to visit. A man should, whenever possible, prepare himself for significant experiences. He should do his part as hearer, as beholder, in order to comprehend and appreciate. By so doing he will not pass through life as a blank.

—U. C. Extension Division.

Teaching rests on telling other people what it is important for them to know—or at least what is important for some of us to have other people believe.

—Science Education.

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If baby teeth are allowed to decay they may abscess and become a source of infection that may go through the entire system.

Neglected first teeth ache as badly as neglected permanent teeth do.

If the teeth are decayed and neglected or are prematurely extracted, the food cannot be chewed properly. Indigestion follows.

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BACTERIA RESIST FREEZING TEMPERATURES

A warning against careless preparation of fruits for frozen storage is found in tests just completed by the U. S. Department of Agriculture.

Bacteriologists of the Bureau of Plant Industry, in a routine examination of frozen strawberries, raspberries and cherries held for three years at a temperature of 15 F., found several species of bacteria, yeasts and molds still alive. To study the behavior of these small organisms at low temperatures, twenty-six were placed in culture and held in a cold storage room at 16 F. for one year.

Eight of the twenty-six were able to grow at this temperature, but thirteen, while showing no growth at 16 F., produced abundant growth when removed to room temperature for twenty-four hours. Only five of the twenty-six failed to survive the year.

These tests, say the bureau bacteriologists, point to the necessity for cleaning fruits before freezing storage as well as to the need for removing any that might carry large numbers of decay organisms.—*U. S. Department of Agriculture.*

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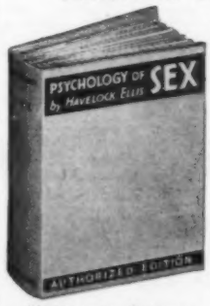

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4. That relaxation will come more readily if it is invited at the same time every day? *See page 740.*
5. That any fruit can be canned with saccharin, but which ones will sweeten most easily? *See page 690.*
6. That mechanical personal cleanliness is the greatest single factor in combating infection in a wounded area? *See page 717.*
7. What diseases are carried by mosquitoes? *See page 705.*
8. What the symptoms of infantile paralysis are? *See page 680.*
9. That the most important and beneficient of our staple foods contain within themselves the very ingredients that the food faddists would have you believe are most harmful when eaten together? *See page 683.*
10. That the healthy young men and women who are able to exert themselves in the strenuous exercises of sport competition are more subject to the "athlete's foot" infection than is the average individual? *See page 728.*
11. How a mental attitude can affect the harmonious working of an organ carrying out its specific as well as its generalized program? *See page 710.*
12. Why one of the great doctors of the sixteenth century was burned at the stake? *See page 697.*
13. Who was the first physician to perform a surgical operation west of the Rockies? *See page 742.*
14. Who was the first scientific obstetrician? *See page 703.*
15. How to choose a good eating place in a strange town? *See page 698.*

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THE STUTTERING CHILD

The family of a child who is a chronic stutterer shows a general predisposition to emotional instability, according to James S. Greene in an article on stuttering in the New York State Journal of Medicine. A child of such a family probably does not inherit stuttering as such, but belongs to the "stutter-type" and inherits peculiar neuropathic tendencies or a general instability of the nervous system which predisposes him to stuttering.

Many children during their first exciting years of speaking are quite susceptible to overstimulation on the part of their parents. They work themselves into a disorganized mental and physical state by literally wearing themselves out by their incessant talk. By this means they lose control of the mechanism of the vocal tract, with the resulting hesitations.

The words stuttering and stammering are often used interchangeably, but according to derivation, stuttering stands for labored, difficult and hesitant speech with resultant defective conversation. Stammering refers to defects of articulation and should never be confused with stuttering. Stammering depends on performance, stuttering on emotional disturbances.

The stutter-type personality is a chronic hesitator coming from neuropathic stock, demonstrating neuropathic tendencies, the author believes. Although intellectually and physically on a par with the rest of mankind, emotionally he is victimized by an instability which makes a rationally ordered life impossible. He becomes excited when he speaks, and this emotional condition is reflected in his inability to talk distinctly.

Emotion is the body's response to the recognition that a crisis is impending. The stutterer suffers from emotional shocks due to recurrent speech crises. The first real difficulties that confront a child are encountered when he enrolls in school, where he meets with competition and criticism. If these cannot be surmounted he lapses into what is known to psychology as a "defense mechanism," and stuttering develops. This becomes a manifestation of his inadequacy to cope with his new problems.

There seems to be about eight times as many boys as girls who stutter. There are obvious reasons for this. The element of social competition enters into the life of even the youngest boys much more decisively than into that of girls. Little girls play with each other in groups, the same as they did when they played with their mothers or sisters at home, while the boy is injected immediately into an incomparably more strenuous atmosphere of group games in which the prowess of much older boys sets the standard.

In correcting this condition the child must adjust his energy output to his surroundings. His environment must be completely changed so that his sphere of activity is gradually enlarged. He must be taught to handle any number of new situations which are likely to arise in ordinary life.

IT'S easy—so easy—to be *sure* about strained foods for baby! So take care mother, say "Heinz" to your grocer—the same as you do when you want better tasting foods for grown-ups.

One glance at the label shows why you should choose these superior foods for your baby. Every tin bears two famous seals of quality. One, the Heinz "57" seal—a symbol that has held the confidence of American women for nearly 70 years. The other, the Seal of Acceptance of the American Medical Association Committee on Foods—which is your further assurance that the claims of high quality and nutrient value made for Heinz Strained Foods are true.

Most babies show a definite preference for the garden-fresh flavor of Heinz Strained Foods. Be safe—and give your baby a treat, too! Ask your grocer today for Heinz.

57

Heinz Strained Carrots are known for their extra fine flavor, due to the use of young, juicy, tender vegetables. The attractive orange color indicates the richness in vitamin A.

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10 KINDS—1. Strained Vegetable Soup. 2. Peas. 3. Green Beans. 4. Spinach. 5. Carrots. 6. Beets. 7. Prunes. 8. Cereal. 9. Tomatoes. 10. Apricots and Apple Sauce.

COOK PORK WELL TO PREVENT TRICHINOSIS

Reports received by the U. S. Department of Agriculture of several recent cases of illness and some deaths from trichinosis justify a repetition of the warning to cook pork thoroughly before serving. Trichinosis may be caused by eating raw or insufficiently cooked pork which contains very small parasites known as trichinae. These parasites occur in a small percentage of hogs, which themselves suffer no apparent inconvenience. But the meat of such hogs, unless well cooked, constitutes a considerable danger to human health.

The assumption that pork which has passed inspection at a federally inspected establishment is safe even when eaten raw or undercooked is erroneous, the U. S. Department of Agriculture officials state. There is no test that will show definitely whether trichinae are present in a sample of pork, except in some cases of severe infestation.

Certain products that are customarily eaten without cooking in the home are given a special processing at federally inspected establishments, and are free from live trichinae. However, pork products of the kind that ordinarily are cooked in the home are not processed in meat-packing establishments, since thorough cooking is a complete safeguard.

When infested pork is eaten by human beings in a raw or insufficiently cooked state, the trichinae are set free in the digestive tract where they give rise to numerous young worms. These invade the muscles, thus causing the painful disease, trichinosis, which may be confused with typhoid fever, meningitis and several other diseases that are characterized by fever. Severe cases of this disease are liable to result in death.

—U. S. Dept. of Agriculture.

Pages 767-768 lacking not important - Bread menu

IT'S A FACT:

That whooping cough is one of the most serious communicable diseases affecting early childhood.

That all children under 2 years of age are in danger from whooping cough.

That most of the deaths from this disease occur among infants under 1 year.

That whooping cough spreads from child to child through coughing and sneezing.

That the disease is most infectious during the early course of the illness.

That it is communicable for at least three weeks after the development of the characteristic "whoop."

That early recognition is difficult because of similarity, in the beginning, to the common cold.

That wise parents, so far as possible, will keep their babies and children away from public gatherings and thus minimize the danger of exposure.

That infants in their first year can be made immune to whooping cough with approved vaccine.

That a qualified and experienced community or public health nurse represents the first line of defense against the menace of whooping cough.

—Weekly Health Message, U. S. Public Health Service and the Iowa Department of Health.

It is the content of our lives that determines their value. If we limit ourselves to supplying the means of living, in what way have we placed ourselves above the cattle that graze the fields? Cattle can live in comfort. Their every need is amply supplied. Is it not when one exercises his reason, his love of beauty, his desire for friendship, his selection of the good from that which is not so good, that he earns the right to call himself a man? I should be inclined to claim that the person who limits his interests to the means of living, without consideration of the content or meaning of his life, is defeating God's great purpose when He brought into existence a creature with the intelligence and godlike powers that are found in man. It is in living wisely and fully that one's soul grows. One of life's strange paradoxes is that those who spend great effort in securing the means of living are very likely to lose their appreciation of the values of life. "What is a man profited, if he shall gain the whole world and lose his own soul?"—*New York Herald Tribune.*

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is rich in DEXTROSE
A FOOD-ENERGY SUGAR

Each flavor has its own added ingredient: Chocolate has cocoa; caramel has caramel, etc. A mixture of sugars (dextrose and sucrose), corn starch, and vanillin flavor.

4 SERVINGS 5¢

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WHEATIES

Make youngsters eat big breakfasts—start them off with a heaping bowl of Wheaties, the new whole wheat cereal. Nutritious and delicious. At your grocer. See 3rd Cover.

DO YOU LIKE GOOD CREAM CHEESE?
HAVE YOUR DEALER SHOW YOU THE NAME
Breakstone's
WHEN HE CUTS YOUR ORDER

THE MARTIN FAMILY VACATION

(Continued from page 704.)

about empty milk bottles that they're through with—is good enough to feed me.

MARY: Then let's go. If I get any more knowledge without food I won't know whether I know anything or not.

GEORGE: I will.

MARY: You would! There's a nice table in the corner where it ought to be cool.

MRS. MARTIN: This is nice. Screens on two sides and a nice little breeze blowing through. What are you going to have?

MR. MARTIN: Plenty, as long as Momma's paying for it!

MARY: Yes, this is one time when Mother doesn't get away cheap.

GEORGE: Look at the price list up there. I know what I'm going to have.

MARY: So do I.

GEORGE: One-half barbecued spring chicken—$1. That's me.

MRS. MARTIN: Don't be bashful, will you?

GEORGE: Oh, if the chicken isn't very big I may have to have a sandwich besides.

MR. MARTIN: They don't seem to have any barbecued turkey.

MRS. MARTIN: At this time of year!

MR. MARTIN: Well, I was thinking that if they had, it would probably cost more than chicken.

MARY: Aren't you sorry you refused to cook tonight, Mother?

MR. MARTIN: She shouldn't be. After all the cheap treats she's given us, she ought to have lots of money. But come on, let's not keep this young lady waiting. What'll we have?

MRS. MARTIN: Half spring chicken.

GEORGE: Me, too.

MARY: And me.

MR. MARTIN: Make it four. And what to drink?

MRS. MARTIN: Iced tea.

GEORGE: Coffee.

MARY: Milk.

MRS. MARTIN: Do you serve it in the original bottles?

WAITRESS: Yes, we do.

MRS. MARTIN: Fine. And you, John?

MR. MARTIN: Coffee.

GEORGE: Wait a minute. Make mine pop.

WAITRESS: All right.